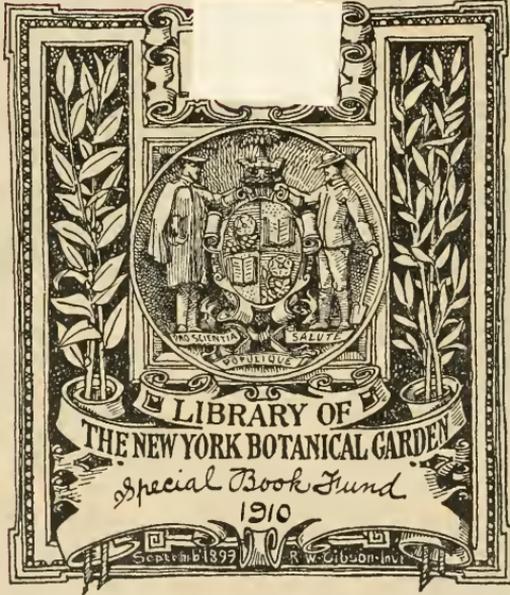




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AND
COUNTRY GENTLEMAN.

A CHRONICLE OF THE HOMESTEAD, POULTRY-YARD, APIARY, & DOVECOTE.

CONDUCTED BY

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TO OUR READERS.

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PRAISE totally unexpected and disinterested is the superlative of commendation. The celebrated beautiful Duchess of Devonshire said, "No compliment ever equalled that of the coalheaver who asked me to let him light his pipe by my eyes." One of our Editors travelling in Wales saw a cottager reading "our Journal" as she sat in the sunshine before her door, and who said in answer to a query, "We could not get on without this Journal." Nor is the aid we are able to afford confined to the British Isles, for we have letters asking for information from the Cape of Good Hope and from the Himalayas, and the day we wrote these words we received the following letter from Canada:—

"Recent articles in the Journal show that this Ontario of ours is not such a far-off province as to be beyond the reach of your interest and influence, so I have sent you by this mail the prize list and regulations for our horticultural shows here, thinking it might interest you to know a little of what is being done here in that direction. For my own part, I know, I look forward month by month to the arrival of my "COTTAGE GARDENER," for it speaks to me of home and all I left behind me there."

Such testimonies are most gratifying, and we again thank our contributors for enabling us to say without self-laudation that we know that the commendations are merited and that they will continue to be deserved.

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WEEKLY CALENDAR.

JANUARY 4—10, 1877.			Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year
Day of Month	Day of Week		Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
4	Tr	London Institution at 7 P.M.	42.2	27.3	34.4	8 8	4 3	10 33	10 36	21	6 23	4
5	F	Geologists' Institution at 8 P.M.	41.4	28.6	34.5	8 8	4 3	10 45	10 49	18	6 50	5
6	S		41.1	29.1	35.4	8 7	4 4	morning.	11 0	(	6 16	6
7	SUN	1 SUNDAY AFTER EPIPHANY.	41.7	30.1	35.5	8 7	4 6	1 14	11 13	24	6 42	7
8	M	Royal Geographical Society at 8.30.	41.0	30.1	35.9	8 6	4 7	2 31	11 28	25	7 8	8
9	Tr	Royal Medical and Chirurgical Society at 8.30.	41.2	30.8	36.0	8 6	4 9	3 33	11 48	26	7 33	9
10	W		42.0	30.5	36.1	8 5	4 10	5 9	0a15	27	7 57	10

From observations taken near London during forty-three years, the average day temperature of the week is 41.5°; and its night temperature 29.6°.

A NEW YEAR'S WELCOME.

"Welcome ever smiles,
Though Farewell goes out sighing;
For time is like a fashionable host,
That slightly shakes his parting guests by the hand,
But with his arms out-stretched, as he would fly,
Grasps in the corner."

SO saith Shakespeare. We learn, therefore, that fashionable hosts were about the same three hundred years ago as now. The guest has told his tale and acted his part, contributed to the amusement of others, and he may go; or he has failed, and outstayed his welcome. In any case he may go; his time is over, and his presence not needed. The old year is the old guest to us; we have shaken hands with him, we gardeners, not very cordially,

for he has not been a very good friend—too cold for too long a time at the beginning; half his time over nearly before he was warm and genial. May gone before spring came. Then he warmed indeed, and such heat! so scorching, so killing to flowers, that his July and August were terrible. With floods and storms he ended. He is gone, may the next year be better. We stretch out our hands to 1877 and bid him welcome.

Next to the farmer, how much the gardener depends upon the weather! The farmer cannot indeed spread a tent over his hayfield, but the gardener can protect his flowers; yet the gardener has not only to fight against bad soil, but bad seasons as well. He can, in fact, overcome the former, but who can overcome the troubles the latter bring? Yet who would give up gardening because of its difficulties? Scotchmen are said to be superior gardeners, because they come from a country where they have more difficulties to contend against than their brethren in England. Besides, Englishmen like to fight against odds. "Hard fighting, gentlemen, to-day," said an English general, when the foe fought hard and the cause seemed doubtful; but he added, with a true English disregard for odds, "let them see who can fight the longest."

'Tis wonderful how fond of overcoming difficulties we are. Last Crystal Palace Pigeon Show I heard one gentleman drawing the attention of another to a certain class of birds, saying, "Those are good, are they not?" Mark the answer given: "Yes, pretty enough; but too easy to breed." The English spirit spoke out then. So I would say, Gardeners, in welcoming in the present year, not knowing what you may have to face, be determined to succeed. Read and work, study in the dark long winter evenings, and by day watch and work; don't be content, young men, with the knowledge you have acquired. Gardening is not like Chinese painting; there is always something new to learn, and some progress is to be made, some region unexplored, and profitable. Not like the Arctic regions desolate and dreary, but pleasant and cheery. There is something very fascinating and attaching in gardening. Collectors notoriously take up and drop their hobbies: now coins, then stamps, then china, but these are human arts, and often and very soon tire,

because soon exhausted; but who that once loved a garden ever tired of it? Who delights most in the gardens in the London parks? People bred in the country, and who had gardens, but who being in London cannot have any: hence they adopt the gardens the State supplies as their own, and enjoy them, not quite as if their own, but still how much they enjoy them.

One old Roman story—that of Cincinnatus refusing to leave his farm for great civic honours—is well known; another is not so well known. It is this: The Emperor Dioclesian after he had resigned the purple retired to Dalmatia, and his successor tried to induce him to return to the cares of state, but without avail. His answer was, "If only you could see the Cabbage which I have planted with my own hands you would not ask me to return." True, Cabbages do not indicate what we should call high-class gardening; but more, I dare say, remained unmentioned. One garden amateur takes to vegetables, another to some fruit—Grapes, or Pears, or Apples; another to some flower or arrangement of colours; while the artisan of the north bestows loving pains on Gooseberries, or (oh! "D." of Deal, though of Deal no longer, yet thine is not unfair dealing) to Auriculas. There is room abundant for all tastes, all choices at the great banquet of nature. A garden is the greatest recreation of the mind; and says one, "My ideal of as perfect a life as is attainable in this world would be a life of a modest and serene man of letters, loving and loved; within surrounded by his books, without encompassed by his Roses." Truly a charming ideal. And perhaps because his study looked into a conservatory at his last residence was one reason why Macaulay, after describing his home, wrote, "I do enjoy this invalid life extremely." And in truth I cannot imagine any man more miserable than one obliged to live in the country, yet with no love of the country. There is a sweet and gracious presence of a noble lady of the highest rank upon which I sometimes look, and always with respect, but with greater respect and reverence now that I know that she goes up to the London season as late as possible, and returns to her noble country home as soon as possible, in order to enjoy her flowers and country duties and pleasures. It is this living in the country among tenants large and small—the great-acred farmer with humble cottager—that binds rich and poor together in a loving bond in this England of ours. Mr. Gladstone once boasted in an eloquent speech of his that "in foreign countries a piece of ground laid out with a view to producing a picturesque effect was always called an English garden;" and no compliment to English tastes or to English gardeners could be greater.

I have sometimes wondered that better gardens are not, as a rule, to be found attached to farmhouse. Good orchards often, but good gardens seldom. It seems that this is also the case in America, for I read in a New York periodical—"How seldom do you see a good garden attached to a farm, yet no one has the facilities in this respect commanded by the farmer. With abundance of land, fresh stable manure with which to make a hotbed of any extent, choice of soil and exposure, steam imple-

ments always at hand, and odd minutes that cannot be better turned to account than in making home beautiful; he need play second fiddle to no one as a horticulturist. A garden adds immensely both to the charm and the value of a country place. 'A love of a cottage' embowered in trees and encompassed with fruits, flowers, and vegetables, is the ideal home about which merchant princes jammured in the city are evermore dreaming. This dream every farmer can convert into a reality. Taking the purely utilitarian view of the subject, a well-kept garden is the most remunerative part of an estate. Leaving the flowers out of account—though the ladies will not fail to appreciate these—the fruits and vegetables will be a rich source of family supply, comfort, and health." Now all this, true no doubt of America, is true also of England. I believe it is customary to say "farmers are bad gardeners," and there is a prejudice on this subject, just as there used to be in the old-fashioned farmer against the use of machinery. For some years every ordinary farmer expected and prophesied that he who used machinery would be certain to become a bankrupt. The prejudice against gardening neatness and goodness at a farm will also soon pass away, and then we may expect the farmers of England to be proud of and show gardens superior to any other class in the country. Professional men delight in their gardens, so do tradesmen, so do artisans and the higher class of cottagers.

The subject of hardy fruits is occupying much attention in England. One writer suggests that all railway cuttings should be planted with Apple trees, and calls attention to the subject in a pamphlet entitled "Ten thousand Miles of Apple Trees." The title is sensational, but the plan might be carried out, and vast quantities of land be utilised; and I should hardly think traffic would be interfered with, unless a train full of schoolboys overpowered the guard, held a pistol to the head of the engine-driver and bribed the stoker, and then made a raid upon the trees on their way to school after their summer holidays. We are told by travellers that in Java the birth of every child is celebrated by planting a fruit tree, which is carefully tended as the record of the age of the child whose birth it registers. This wise regard for the future deserves imitation. There is another plan I should like to see adopted—that is, that landlords of cottage property in the country should plant a couple at least of good Apple trees in each cottage garden. These would come in useful to a family, and a well-stocked garden helps to keep the tenants in the country, much to their true interests and the benefit of the farmer. It is a curse to a country when its peasantry rush into the large towns. Emigration of the labouring class has been carried far enough, and when a shipload of poor creatures arrives in Australia, instead of being welcomed they are received with hisses and groans and told to go back to England. How discouraging such a reception must be to poor English husbands with their wives and children, who, having escaped the perils of a three-months voyage, are looking forward to a plentiful and comfortable home in a foreign land.

A good hint is given by Mr. Holgate which I would recommend to the attention of workhouse masters in rural districts. He says, "I think a good opening for boys might be found if the master would take an elder boy under his charge and teach him some of the more advanced points of garden work, such as taking cuttings, budding Roses, planting and potting, &c. This has been done in one school with such good effect "that boys," says Mr. Holgate, "so taught are snatched up immediately by the neighbouring families. School gardens for vegetables and flowers might also be arranged. All this has been done in a union workhouse in which I have been interested for many years, and in addition the boys have gardens of their own; and the master, himself a very successful prizetaker both in flowers and vegetables, gives prizes to the boys for the best-kept garden, an example which might be followed with advantage. In the same workhouse the aged people's wards are full of flowers, and they have charge of some bedding plants in the winter, while their court is bright during summer with Geraniums, Hollyhocks, Dahlias, &c. All this adds an interest to their lives, and, like the bright pictures put by the matron on their walls, makes them a great deal happier. The monotonous regularity of a workhouse life is to all strangely depressing, and nothing tends so much to remove this weariness as a plentiful supply of flowers."

Before leaving horticultural subjects one word about our Apple and Pear elections. These will, I hope, go forward, and will be a means to a very desirable end—viz., clearing from our gardens and orchards bad and half-bad varieties.

I must now turn to that other department of "our Journal" which takes in birds of all kinds, but chiefly the fowl and the pigeon, and excludes not the rabbit, while it gives great prominence to the honey bee. Prize poultry seems to be esteemed more than ever. Where ten men wished to keep them ten years ago a hundred men do now. Those who prophesied that the love of keeping these birds would cease, and who called it a mania—a rage, have proved to be false prophets. A spilling bee may be a mania, but not poultry. Then when a man moves near London or into a town, and has to give up fowls, he only goes into the kindred fancy, that of pigeons. He only transfers his pets to the other part of the show. Where people cannot keep living things of value, how they will take up with living things of no value! A pet they must have. This is well illustrated by an extract which follows, from the visit recently paid of an Englishman to a Spanish prison. "As I passed" says he, "into the last court of the prison I had a view of the prison pets. Here a poor lad from his lone charcoal-cutting hut in the wild sierra, a child of ten years old, had brought his father a mountain fox, which strained at the leash and darted about in all directions. Here a fearful-faced dark-eyed girl had brought a tiny cageful of birds; others had brought other pets. A little cluster of the men were kneeling down, I observed, in a corner of the courtyard; and when I peered over their shoulders to see what was the attraction, to my surprise they were feeding two tiny sparrows, which, they told me, had fallen out of their nest into the courtyard and were now the pets of the prison." So have I seen in an English hospital a poor consumptive lad whose greatest delight was rearing a nest of young linnets, and he was as proud of them as possible, pointing out to me which he considered the best, and how this or that delicate one had improved under his care.

I think the advantage of a hobby for the artisan class, now that their hours of labour are shorter, is even greater than in former days, and would prove a counter-attraction to the public house and the skittle alley; and the more energetic a man is, the more he needs some outlet for his energy which will occupy time and thought. An engine wants a safety-valve, and without a resource of some kind a man is apt to become the victim of too much tobacco, or of something more hurtful. Hence I am very glad to see prizes offered at our large shows for the less expensive classes of pigeons, as, for instance, for flying tumblers. This class at Bristol was well filled. So also I advocate everywhere a class for mealy pouters; their price is within the means of artisans. The mealy, well barred and coloured, is a handsome bird and is a true pouter, and existed years before the whites were made. I want hours of relaxation to be harmless hours, and not, as they often are, harmful hours.

But there are not only artisans with more time to enjoy or waste, but there are men whose lives are very dreary at times. For instance, there is the bachelor curate in a big out-of-the-way straggling village, where his duties are spread over a large tract of country; where he has no neighbours, no society, no amusements but what he can make for himself; where he leads the life of a veritable hermit, and looks upon a face from the outside world as a perfect blessing. The poor man cannot always read, what is he to do? Why, if he had only a pet or two he would be much happier. Garden in his lodgings he cannot have; but if he could only have, say a pair of fancy pigeons, or even a pair of canaries, he would be the happier; or experimented upon breeding goldfinch or linnet mules. He would be sure in his parish to find some man or boy who was a fancier, and who would listen to a brother fancier in the pulpit with more respect than to one who only knew "parson talk."

Return we in thought to the new year. Let us welcome the new comer with a warm grasp. May he prove a happy one to all. A welcome, too, I send out in these lines to all. Welcome new correspondents who send us their observations; welcome old and tried correspondents. Welcome new readers, and may you enjoy and profit by our pages; nor let us forget our old readers, who have stood by us so many years. Welcome one, welcome all.—WILTSHIRE RECTOR.

SELECT VEGETABLES FOR SMALL GARDENS.

READERS of the Journal should now have little difficulty in ordering the best Roses, as the late election and all its bearings, every line of which I have read with profit, has made us all smiliar with the cream of the "queen of flowers" and the

emblem of "old England." Now I have been thinking lately, that if a flower which only blooms with most people for about two months out of the twelve, is under the necessity of being so prominently brought before the public, surely the space could not be considered ill applied that brought a few good vegetables under the notice of your readers. I have heard most enthusiastic admirers of flowers confess, that after all was said and done about their pets, the flower they esteemed most in the garden was the Cauliflower.

At the present time, when your advertising columns advise the publication of seed catalogues and many will be receiving their annual seed list, it may seem unnecessary to call attention to any particular class or variety of vegetable; but many would no doubt feel thankful enough to have some "practical hand" to look over and mark the best varieties from amongst the hosts in the catalogues. I have received my seed list to-day, and with the exception of a few new things I will mark the same this time as I have done on former occasions, and it is these I have selected in years past that I now wish to recommend to others; and I particularly wish it to be understood that every one of them has proved to be of a very superior description under no very "highly favourable" circumstances, but just with the attention given in an ordinary kitchen garden.

I will begin with what are always acceptable to everybody—Potatoes. For earlies I plant the following kidneys:—Myatt's Prolific, Early Sandringham, and Rivers' Royal Ashleaf. Second early—Huntingdon Kidney and Rector of Woodstock. Late—Red-skinned Flourball, the Old Regent, and Porter's Excelior. Of the newer American varieties I mean to devote a good breadth of ground this incoming season to Snowflake. I am fully convinced this is an excellent "poor man's" Potato, as it bears enormously, and the produce is of superior quality.

The most profitable crop of Cabbage I find to be that produced from seed sown in the autumn. Wheeler's Cocoa Nut and the old Early York are sown in August, planted out when ready, and cut for use in May and June. The stems are left in the ground, when they throw out many small sprouts, which are much thought of in the kitchen in autumn and winter. Drumhead stands the weather well, but it is coarse. Red Dutch is the only sort grown for pickling.

Early London is the variety of Cauliflower used for early produce, and after mid-summer it is succeeded by Veitch's Autumn Giant, which is still fit for use out of doors, and is undoubtedly the best Cauliflower extant. Snow's Superb Winter White and Waleheren are two excellent Broccolis. Dalmey and Strymer's Giant Brussels Sprouts when true are always worth their ground. The best Celeries are Major Clark's, Leicester Red, and Sandringham Dwarf White. Early Horn Carrot should always be sown for the first crop, and James's Intermediate Scarlet or Altriohann to come in late. Dell's Crimson Beet is not only the best for culinary purposes, but its foliage is more attractive than any other sort, and it does quite well to associate with flowering plants. The Student Parenip is the only sort I find it necessary to grow. When Myatt's Garnishing Parsley can be had true it is unsurpassed by any other I have seen. Onions are generally considered an important crop. The sorts of these I will name are James's Keeping and Nancham Park for summer sowing, Silver-ekinned for pickling, and Tripoli and Giant Rocca for autumn sowing.

Peas are always an important crop in all gardens. I will only name six sorts out of the many varieties now in cultivation. Early—Sangster's No. 1 and William L. General crop—Veitch's Perfection and Champion of England. Late—No Plus Ultra and Maclean's Premier. Dwarf Kidney Beans—Canadian Wonder and Osborn's New Foreign. The latter I find excellent for either forcing or growing in the open air. Broad Beans—Windsor Green and Beck's Dwarf Green Gem, and there are few which surpass the old Scarlet as a tall or running Bean for general usefulness, but Carter's Champion has larger pods. Small gardens should always be well provided with salads. The best way of doing this is to grow Lettuces of the All-the-year-round, Hardy White Dutch, and Victoria varieties in the Cabbage section, and Bath and Paris Green among the Coo or tall-growing sorts. Endive—Green Carled. Turnips—Early Snowball and Golden Ball. Spinach—Erickly. Rhubarb—Royal Albert and Myatt's Victoria. Leeks—Henry's Prize and Musselburgh. Radish—French Breakfast and Wood's Early Frame. Savoy—Drumhead and Tom Thumb. Vegetable Marrow—Custard and Moore's Vegetable Cream. Tomatoes—Hathaway's Excelior and New

Green Gage. Cucumber—for early spring, Telegraph; for summer, Telegraph; for winter, Telegraph.—A KITCHEN GARDENER.

THE NEW ROSE YEAR.

"The harvest now is ended, the summer days are gone," and yet every heart is joyous, every mouth uttering good wishes.

And why? At a time of the year when all nature is dead, when the sky is lowering, and the daylight so dim that the room in which I write is in semi-darkness; when snow or sleet is falling, and except in the conservatories of the rich no flowers are to be seen;—why should we be thus glad at heart? It is because at this season were brought gifts, the value of which is more than tongue can tell or voice express; flowers that never fade, but bloom on and on through all eternity. Yes, it needs not flowers to make our homes gay at this season; the evergreens do this, and also remind us of the life that never ends. And besides, now the darkest and gloomiest months of the winter season are over, the shortest day is past, and each day we live brings us nearer to the time when our Roses again will bloom, and our woods and lanes be carpeted with those wild flowers which Nature gives with so bounteous a hand to this favoured land of ours. When, therefore, I wish our readers a happy new year, I do so with all the heartiness with which this most hearty of all seasons inspires us.

This Journal has ever had a more personal and closer connection with its subscribers than most others can boast of. It has ever tried, and I think has succeeded in the attempt, to make it a friend and adviser to each one of its readers. Its columns will attest that there is no subject in horticulture, or indeed in any other department with which the Journal has to do, on which advice is not sought for, and the best assistance that is procurable is given with readiness and pleasure. But more particularly have I welcomed all contributions and questions upon the subject of the queen of flowers. I think that it has earned, as indeed it possesses, the name of "The Rose Journal," although that name is not emblazoned on your coat of arms (the writer of this most heartily wishes it was). There is scarcely a number issued which does not contain an article or letter upon that subject of subjects—the queen of flowers, and I consider it a very black Thursday indeed when the Rose is not mentioned in our Journal. To rosarians, then, and others also, I offer sincerest good wishes, and also congratulations. I consider that the last year saw a very great increase in the number of the cultivators of this lovely flower, and from the letters I receive I think I am entitled to form a good judgment on this point.

The horizon for Roses is very clouded, for some of the great companies who used to entertain the worshippers of Rosa have closed their doors, and for a time a deluge of incoherency seemed to be sweeping all Rose shows away; but the storm has lifted, and the dawn suddenly brightened. London will not be without its Rose show, and the Rose's liege and loyal subjects will not have to be contented with paying their addresses in provincial courts.

Undoubtedly the event of the Rose year has been the formation of the National Rose Society. I never remember to have attended a meeting where more unanimity of feeling and enthusiasm was evoked than at the Rose conference held on that gloomy day in December at the Horticultural Club; and the mention of this Club reminds us that another step has been taken in advancing horticulture, which it would be difficult to overvalue. It will be evident to all how useful and convenient it must be for horticulturists from all parts of England to have a place in the metropolis where they can meet and discuss horticultural matters or arrange shows; and a most telling proof of its value was afforded by the very meeting of which I am speaking. If the Club had not opened its doors to us on that occasion we should have had to engage a room, and at the very outset a difficulty would have been felt in the worst of all troubles—who is to pay? But now we always shall have a Club where we can meet, converse, and enjoy ourselves, as well as hold committee and annual meetings. I wish, therefore, every success to the Horticultural Club.

Once more, then, let me wish you all a very happy new year. I thank your contributors, and hope they will continue to instruct and entertain us. Nor do I forget your staff, and all the rest who have helped to make this Journal what it now is; and I hope that it may long continue to bear the name of,

and prove worthy of the honour of being, the "Rose Journal of England."—WYLD SAVAGE.

NOTES ON PINE APPLE CULTURE.

THE Pine Apple is found growing wild in Brazil and in different parts of the West Indies, from whence many inferior fruits are still imported. It was introduced into this country in the eighteenth century. For many years afterwards its cultivation was very imperfectly understood; but this has not been the case for some time, as many intelligent gardeners have for years paid great attention to its requirements, and in many places it is well managed. It has never been grown in this country for market so extensively as Grapes or some other fruits, but it was grown remuneratively for this purpose by some until its cultivation was begun on a large scale a year or two ago in St. Michael's. The low prices at which the showy fruit from there can be sold in our markets has caused some market growers to cease its cultivation; and some would have us believe that the St. Michael's fruit will be the means of stopping the cultivation of Pine Apples in many private gardens. But that is not my opinion, nor do I think it can be the opinion of any person who reads the *Journal of Horticulture*, as there is hardly a week passes without one or more Pine Apple questions being replied to through your answers to correspondents, and this, I think, is a very good proof that the queen of fruits is still in as great demand as ever. Besides, consumers of market fruit are, as a rule, those who have no means of growing it themselves, for those who are in a position to grow it must prefer that of home production to the very best of that imported. However, I have no intention of writing an argument in favour of the continuance of Pine Apple-growing; that would be quite unnecessary.

Propagation is accomplished from suckers, which are produced from the main stem of the plant. It is the best plan to have some regular time to take off the principal batch of suckers; but at the same time suckers may be taken off and rooted successfully at any season. They do not root so quickly or freely in the winter time, however, as in the long days, and those inserted in winter must have the assistance of a steady bottom heat of 90°, with a top heat of 60° and a moist atmosphere. In taking the suckers from the old plants at any time they must always be carefully severed close to where they adhere, so as to keep all the little roots entire which are clinging round the base of the sucker. A few of the lowermost leaves must be pulled off with the hand, and then the suckers are ready for potting. I may remark here that very large suckers are not the most desirable, as they seldom make the best plants in the end. Suckers from 12 to 18 inches in length are the best. When they have to be planted prepare as many clean 6-inch pots as there are suckers; put about 1 inch of broken crocks in the bottom of each with a little moss over the top, and then put a sucker into each pot, using good fibrous loam mixed with a little boneseal or fine bits of charcoal. The plunging material may consist of either tan or leaves, some prefer the former, others the latter. Both are about alike good, but the tan is much the easiest worked amongst. Its depth for all kinds of plants should be from 18 to 30 inches. The suckers may be plunged 15 inches apart each way. The soil should be moderately moist at potting time, and no water should be given until the young roots are at the edge of the ball. In warm weather, or when the air is rendered dry from strong fire heat, the suckers must be moistened overhead occasionally. As soon as the roots have made their way into the soil give it a good watering. September is the best time to take off the main lot of suckers, when they soon root and do well throughout the winter.

After they are rooted and watered once they frequently do not need any more water for six or seven weeks. When the soil of those rooted in September is matted with roots the plants should be turned out of their pots, reducing the balls, disentangling the roots and repotting into the same sized pots. Replunge the pots, and as soon as the young roots begin to spread in the new soil the plants must be shifted into their fruiting pots. Those put in as suckers from now until February or March will need no other potting before going into the fruiting pots. The fruiting pots should be 10 and not exceeding 12 inches in diameter; as good fruit may be grown in these sizes as a 16-inch pot. More drainage is needed in the fruiting pots, and the soil must be rougher at this than the former potting.

In potting let the top of the small ball be an inch or so below

the surface of the fresh soil, and it should be left at least 1 inch below the rim. The soil, too, must be made very firm with a blunt-ended piece of wood, and after potting the pots should be firmly plunged in a freshly made up bed, where the bottom heat will soon rise to 85° or 90°. The plants must be treated like rootless suckers until they begin rooting into the fresh soil. In the summer they will need water about once a week. This with air-giving and keeping the atmosphere moist are their principal requirements throughout their growing period.

The Queen variety needs different treatment from any of the others when the plants are of a fruiting size. All the other kinds may be kept growing on slowly until they fruit, but the Queen has to be rested and partially starved before it can be made to show fruit. Plants put in their fruiting pots in April should be grown sharply on until the end of September, when water and heat must be gradually withheld from them until the plants have ceased growing, which they will do in a heat of 50°. They should remain like this until about the first week in January, when a fresh bed must be made ready for them, and in this they must be plunged and started as they were when shifted first into their fruiting pots, but with this difference, that they must be watered thoroughly immediately they are replunged, and the soil and atmosphere must be kept moist, and the temperatures should be, bottom 85°, top 70° and 75°, until the fruit appears and for some time afterwards. This treatment seldom fails to bring up the fruit, and if the plants have been well grown and matured in autumn there is not much danger of failure. Still, even with the best of growers the Queen is often found to be uncertain, and those with little experience would do well to increase other surer sorts. Smooth-leaved Cayenne, Black Jamaica, and Charlotte Rothschild will all show fruit without being starved or started with a bounce.

All plants with green fruit should be constantly kept in a moist condition at the roots. As soon as the fruit begins turning yellow give the plants no more water until the fruit is out, then water liberally to bring on the suckers. When mature water is used a little guano is the best.

I have said little about syringing and temperature, nor are any lengthened instructions necessary. The temperature should always be regulated by the condition of the outside atmosphere. It is always better for the temperature to rise and fall with this, than fire hard to keep up a given heat in extreme cold weather. I have seen Pines kept at nearer 50° than 65° throughout the winter with the very best results.

Queens produce suckers more freely than any other sort. When the fruit is cut the suckers may be taken off and potted, or the plants with the suckers attached may be laid in a spare corner until a lot of them can be put in together. In the dull winter days all Pine plants, especially those in fruit, should be exposed to all the light possible, and no drops of water from the roof must be allowed to fall into the centre of any of the plants or they will decay.

It often happens, especially with Queens, that a number of them will ripen their fruit at one time. This is not desirable, as a succession of fruit for a long period is what is wanted. Laying a piece of newspaper over a few of them so as to partially exclude the light for a week or two before they begin colouring will make them longer in ripening than those not so treated; and when they are ripe, by removing the plant and fruit into a cool room will preserve them in good condition for six weeks or two months, so that with a little of this kind of scheming a long succession of fruit may be had from a number of plants that showed fruit together.

In some large places there is house after house devoted to Pine culture; but although this is necessary to keep a large supply of fruit, small demands may be met from a limited space. A good many fruits may be cut annually from one small fruiting house, a pit for successional plants, and a frame for suckers. Some growers approve of planting them out in beds; I would not advise small growers to adopt this plan. Good fruit may be had from it, but there is much inconvenience attached to it. Supposing a bed to be full of large plants now, some of them may show fruit at once, while others may not do so for six months after this, and the bed cannot be cleared or replanted until the last of the plants have been removed; whereas when in pots the late-fruiting plants can be gathered together from amongst the early plants, plunged together, and the vacant space filled up with others.

Insects are not very partial to Pines. Mealy bug and scale are their greatest enemies, and they are generally introduced by other plants. When the Pines do become infested to any

great extent the best way is to clear them out, clean the house thoroughly, and begin with a fresh stock.—M.

JUSSIEA GRANDIFLORA.

We are indebted to Carolina for the plant our figure represents. It is said to have been introduced in 1812, but appears to have found little favour among cultivators. Loudon pays a poor compliment to this family of plants, regarding them as unworthy of the name of Jussieu. *Jussiea grandiflora* is an aquatic plant. A greenhouse is suitable for its cultivation. Though possessing no great beauty it might be included in the collections of those desirous of growing plants of this nature. It may be increased by seed sown as soon as ripe, in pots drained and filled with a compost of loam and sandy peat and placed in



Fig. 1.—*Jussiea grandiflora*.

water; also by division. Where there is no aquarium large basins or bowls may be substituted. I have sometimes beaten clay firmly in the bottom of ordinary garden pots for some of my aquatic pets, and they have succeeded beyond my expectation. It is to be regretted that there is not more interest taken in the various species of water-loving plants, which when once established require but little attention.—N.

LATE-KEEPING GRAPES.

EARLY decaying in many instances would be more correctly descriptive than late keeping as applied to bunches which were intended to hang until March, but decayed before January.

A variety of causes may have contributed to the decaying of Grapes, such as too much moisture in the air, too much foliage on the Vines, too many plants in the vinerias, too late or insufficient ripening of the fruit, and insufficient thinning-out of the berries. These are contributory causes of early decay, and they have all of them been aggravated or intensified by a peculiar incidence of the autumn and winter which has not been sufficiently understood.

There have been periods during the present autumn when good housewives have been sorely puzzled at the unwonted dampness of their dwellings—the “walls have run down with water,” the floors and ceilings have been damp, and even the “bedding has felt clammy.” Such household complaints must have been very familiar to many gardeners, some of whom have not been able to account for the cause of the “walls sweating,” while others—who are “given to thinking”—have understood the matter perfectly. But what has this to do with Grapes? Much, for Grapes will “sweat,” as it is erroneously

termed, under the same conditions as will walls. But in truth it is not “sweating” at all. The moisture which has puzzled good women did not come out of the walls, nor did that perplexing some men come out of the Grapes.

The season has been unusually mild and damp, yet occasionally a few very cold days have been experienced. These cold days have been followed suddenly by unusual mildness, and it has been on the sudden rising of the temperature after the cold days when the “sweating” has occurred. If the surfaces of walls, glass, calico, or Grapes become unusually cold and the temperature surrounding them suddenly rises, the cold surfaces become condensers, and the moisture of the air is transformed by them from the invisible to the visible state. The greater the difference in the temperature of the surfaces and that of the surrounding air, the greater is the quantity of moisture that is precipitated. The moisture does not come out of the walls and the Grapes, but out of the atmosphere.

That is an important fact to be remembered; and another equally important is, that the moisture is governed by the temperature. It is not enough that the air of a vinery where Grapes are required to be kept dry should be provided with a steady or a minimum temperature of 40° or 45°, for if a house has been at 45° for a week, and the outside temperature suddenly rises to 55° (which has more than once been the case lately), moisture will inevitably be condensed by the cooler surfaces of the Grapes. When the air outside is clear, cool, and dry, as it frequently is in winter, then there is little or no moisture to precipitate on the Grapes, and a house temperature of 40° is safe; but when the prevailing outside temperature is high, also moist, then the inside temperature must be high too, or the Grapes cannot be kept dry.

The condensation of moisture is doubtless understood by many gardeners; a few there are, however, who do not fully appreciate it, and for the sake of these few the matter may well be made plain. Take a cold slate—a common school slate—and cover it with writing on a wintry day; step with it into a heated plant stove, and in less than five minutes the writing will be invisible, the slate having become covered with dew condensed from the warmer atmosphere. Now place the slate on the hot-water pipes and heat its surface, and the writing is again visible, and continues so as long as the slate is kept in the house. That is just what walls and Grapes do after a week of cold weather being followed by a sudden rise of temperature. Their surfaces do not become warmed so quickly as does the air surrounding them, and hence the “sweating”—the condensed moisture—causing in one case decay, and in the other discomfort.

By taking cognisance of the principle of dew-formation, and guiding the temperature accordingly, much may be done in preserving Grapes in a season like the present, but without this knowledge, or without having acted in accordance with it, many Grapes have decayed prematurely. Yet after doing all that was possible the fact still remains that the season has been unfavourable for the sound-keeping of Grapes, and it is only fair that all concerned should “know the reason why.”—A NORTHERN GARDENER.

THE PERSIMMON.

In your Journal of November 30th in an article on *Diospyros Kaki* you repeat the popular opinion that the *Diospyros virginiana's* fruit “is not palatable until frozen.” Allow me to say that this is a fallacy. The Persimmon, as it is known through the southern half of the United States, is quite variable in the size, season, and quality of its fruit, and I have no doubt will be ultimately developed by selection into a valuable species of fruit. I have seen ripe specimens in this latitude (89° N., about St. Louis) as early as the end of August, whilst the fruit of some trees hardly ripens at all, or if so, imperfectly, by the time cold weather begins. But the ripening and sweetness seem to depend entirely on the length and heat of the summer, and not at all on the subduing powers of early frosts. Hot summers produce early-ripened delicious fruit, cold seasons and high latitudes produce poor fruit. Arthur Bryant (a brother of the poet Bryant), living at Princeton, Illinois, about latitude 41½° N., tells me that in some seasons the Persimmon with him does not ripen, and he thinks the frost has nothing to do with its maturing. He has trees nearly forty years old of his own planting, and has observed them closely.

The Persimmon varies also a good deal in size. I have heard of specimens 2 inches in diameter, and have seen them

as small as three-quarters of an inch. They vary in quality. Some are delicate, others always dry and tasteless or astringent. The reason of ripening by selection of varieties could undoubtedly be made to cover two months or more. It seems to be a fruit of great capabilities; and but for the fact that we had so many Apples, Pears, &c., provided ready to our hand by the mother country, this, as well as other native fruits, would now be well on in the course of amelioration.

This was a favourite fruit of the aborigines, who dried it for winter use, and it is mentioned by all the early travellers—John Smith, Marquette, Charlevoix, &c., under various hard-spelled names, such as *Plaquevine*, *Patchumen*, &c. It is still said to be a great favourite with the Indians of the south-west.

I am inclined to think that the astringency complained of in the *D. Kaki* by your correspondent, and which is a marked characteristic of the unripe *D. virginiana*, will be found to be the result of insufficient light and heat in your English climate. Judging from analogy a high and long-continued temperature under bright skies will give the best fruit.

I have omitted to add that there are several cases on record of seedless varieties of the Persimmon. In one case an attempt made to perpetuate this peculiarity by grafting failed from the curious fact that the seedless variety when grafted on a non-bearer began to produce fruit with seeds. (See *Gardeners' Monthly* for 1876).—W. C. FLAGG, *Moro, Ill., U.S.A.*

ROSES IN SMALL GARDENS.

I AM glad to see that "E. M., *Croydon*," has modified his sweeping condemnation of poor Rose-growers, and I think if he would take the trouble to go to a village flower show the Roses he would see there would make him more lenient still. But as he seems a Rose enthusiast I would suggest that he publish a pamphlet at a cost of 1*d.* or 2*d.*, with rules for general Rose-growing, which I feel sure would be gladly welcomed by vicars of rural parishes anxious to encourage the cultivation of flowers among their parishioners.

I think "E. M.'s" condemnation too sweeping when he says every other garden throughout Rose-growing England can only produce "miserable starvelings." I have been surprised in my country wanderings at the beauty of the Roses generally grown, especially by cottagers. Granted "the names of the varieties" would prove them to be old-fashioned, but these are still admired by some people, as I was glad to read in the pages of this *Journal* a few weeks ago. Before finally quitting this subject I must just add, that I write entirely on behalf of cottagers and others with small plots of ground who are Rose-lovers, for I do not cultivate one.—R. S.

ALLAMANDAS.

AMONGST the many stove plants cultivated for exhibition purposes or otherwise none are more frequently met with than *Allamanda*, and, apart from exhibition purposes, none are made less use of. The flowers are considered by most gardeners as worthless for decorative purposes because they will not last long. It is true they will not last if cut with a long portion of wood attached to them and arranged loosely in trumpet-shaped vases, for in this way the leaves soon become like so much wet rag. A system that I have practised for some time past is to fill a glass vase, similar to a dessert dish (with or without a pedestal), with Swiss moss, and elevate the centre above the sides of the dish and fill it with water; then gather a quantity of single blooms, and arrange them so that the broad segments of the flowers will rest on the moss. Certainly they have a flat appearance, but the introduction of foliage or a few Fern fronds wonderfully relieve the arrangement, and a vase filled in this way is not to be despised, particularly at this dull season of the year, when good flowers are scarce.

Allamandas are not at all difficult to please with soil. I have a number of plants growing most luxuriantly in road scrapings and horse droppings. They have rambled over all the roof of the aquatic house, and frequently require thinning to admit light to the *Nymphæa* in the tank below. The plants commenced flowering in March, and have continued producing thousands of flowers until the last fortnight. When the wet weather set in the plants began to relax. I feed liberally with liquid manure, and allow the long shoots to ramble about and hang loosely from the roof. In this way they present a natural and wild appearance, and look much better

than if tied closely to rods and rafters, as nothing mars the effect of a plant more than by tying and twisting it the reverse of nature. The variety I grow principally is *A. Hendersonii* or *Wardleana grandiflora*. It is of a beautiful straw-yellow colour, and well deserves more extensive cultivation.—JAMES OLLERHEAD.

A PRACTICAL GARDENER'S IDEA OF A NATIONAL HORTICULTURAL SOCIETY.

A CRISIS appears to have overtaken the Royal Horticultural Society. It is proposed by an influx of fresh blood to resuscitate the Society. Guinea fellowships are proposed as (I suppose) the nucleus around which horticulturists will rally. Whatever may be the upshot with the Royal Commissioners, it may be that the Society will make a retreat to Chiswick, coming to arrangement with the Commissioners for the fortnightly meetings at South Kensington and periodical exhibitions. This would undoubtedly help the Society in its present dilemma, but the privileges likely to accrue to the guinea fellowship—viz., admittance to all the Society's shows in London and the provinces, and to all minor exhibitions of fruit and flowers held at the fortnightly committee meetings, and daily admittance to the Chiswick Gardens, are privileges of no very great importance to provincial Fellows, who would be very little benefited by its shows and gardens, though of great value to those within easy distance. Distance alone would influence many to withhold their support from a central society having no advantages to offer except shows they can at most but occasionally visit, the garden for the same reason being practically sealed. "Old associations" would not avail to retain any great number of patron Fellows, who principally are most interested in the gardens at South Kensington. Their luxury gone, what could they be expected to do but to become guinea Fellows or turn their backs upon the Society? Some would no doubt take to great an interest in horticulture as to continue their subscriptions as patron Fellows, and would not experience any disappointment in having few or no privileges. It is, however, proposed that patron Fellows subscribing four guineas receive a ticket admitting self and friend, and the right to a second ticket admitting their head gardener to all the Society's shows.

Now, it appears that privileges are after all to be measured by the amount of guineas subscribed. Four-guinea subscribers are to have practically three tickets, and guinea subscribers a ticket to all the Society's shows, exposing the broad basis upon which a society of this kind ought, if it is to prosper, to be founded. There ought not in any national horticultural society to be any fancy privileges, but an equality of subscription conferring equal advantages. It ought to be instituted upon principles of reciprocity, subscribers encouraging by their subscription the advancement of horticulture, and receiving in return the gratification that the Society is doing useful work—truly horticultural work—by investigation and propagation.

The class most directly interested are those contributing with a view to benefit direct or indirect, and those who include its workers, who will by investigation and information do the society much valuable service, far exceeding any money subscription. I need not do more than mention the advantages accruing to possessors of gardens, gardeners, and nurserymen. Employers would have the advantage of the society's work, be served by a higher stamp of gardeners, and those would, from their increased proficiency, attain to a better social position. Commercial members prospering from demand for the plants required for embellishment and for useful purposes.

I have an idea of a Royal horticultural society. The present one rid of the South Kensington Gardens would, with its charter and the Chiswick Gardens, be the soundest foundation upon which to build a school or college of horticulture as free in principle and constitution as are most of similar institutions upheld by subscription. Before proceeding with an outline of a national society, it may be as well to begin with the Royal Horticultural Society's disaster—namely, its league with the Royal Commissioners. The only way to satisfy the debenture-holders would probably be for the Commissioners to take upon themselves the responsibility of the whole or part of the debenture-holders' claim, and convert the gardens into a recreation ground or fashionable garden, maintained by the leaseholders in the neighbourhood, or converting it into a company. The Commissioners to compensate the Society for its outlay upon the gardens by a grant of so much of the building and gardens as would be required for the Society's require-

ments for offices, meetings, and exhibitions, or, failing that, granting a monetary consideration. But as there is such unanimity shown in respect to the suitability of the present site or locality for the Society's meetings and shows, why not seek government aid in respect of the present buildings and ground requisite for the successful carrying-out of the Society's objects? Surely the time has arrived when horticulture should take its rank as one of the institutions of a great people.

The Chiswick establishment should be continued as an experimental garden and school of horticulture. Students qualifying for gardeners to be admitted upon the recommendation of Fellows, and these students to form the labour staff of the garden at stipends suitable to their respectable maintenance, or such remuneration as the labour performed deserves. Other students to pay a fixed rate per annum as may be determined on from time to time by the executive, and if boarded pay for their maintenance; they not to perform any menial work, or only at the instigation of the professor, as may be necessary for instruction such labour may be performed. This latter class of students it is presumed will be sufficient to meet the salary of the Society's professor of horticulture, the students to have free admission to all lectures given in any of the Society's places of meeting, whether the lecturer gives his services gratuitously or otherwise. The Society to hold four exhibitions in each year in London or its environs, and prizes offered at each for plants, flowers, fruit, and vegetables, and once every year a national exhibition in the provinces, commencing with London the first year. Its first provincial show might be held in the north, its second in the east, third in Scotland, fourth west of England, fifth Ireland, sixth that locality or place in England holding out the greatest inducement to the Society for the holding of its exhibition, the seventh to be an international one held in London, the second international held in Scotland, and the third in Ireland, every seventh exhibition held by the Society to be international.

Assistance should be given to provincial horticultural societies in the framing of their schedules and rules, placing at the command of societies in union with the Society a censor or judge to act with those appointed by the Society, and between whom the Society's official shall act as umpire. No fee to be given by the local society to the judge or charged by the Royal Horticultural Society; but the society making use of the Society's officer to pay his travelling expenses, with such allowances for hotel expenses as shall be determined by the Royal Horticultural Society. It shall be the duty of the judge to award, with the approval of four Fellows of the Royal Horticultural Society, the silver and bronze medals to such productions as in his and the Fellows' judgment are most deserving of special recognition through evidence of superior cultivation. N.B.—If there be a difference of opinion in regard of the awarding of the medals, there shall be no award in that case unless two of the Fellows agree with the Society's censor. In the absence of Fellows of the Society the censor shall have the aid of four horticulturists approved of by the local society's secretary, and with their assistance award the medals of the Royal Horticultural Society, having at least two approvers in each case of his award.

The Royal Horticultural Society should encourage in connection with provincial horticultural societies the establishment of gardeners' institutes by correspondence, and a copy of its journal in exchange for papers read at the institute.

Correspondence to be opened and maintained by the Royal Horticultural Society with colonial and foreign horticultural societies, and an exchange of publications.

A library to be formed as complete a kind in respect of horticulture and allied sciences as possible, which shall be free to all members of the Society.

The Society to publish a journal monthly containing a full report of the work performed by the Society, and if this be of a kind exceeding 1s. in cost monthly, papers shall form a separate publication, and sold in book form, but from publication in the gardening periodicals would be of little value; and at the end of each year a complete account be published of the state of the Society's finances and affairs.

Reporters to have free access to all the meetings of the Society with a view to greater publicity than would be afforded by the journal.

I shall say very little of the Society's constitution. It needs not revolution but reform. The present Council is perhaps as good as any of its predecessors. Whatever the Council be it must be prepared to do the bidding of the subscribers. No

constitution would answer so well as a crowned republic. A President—His Royal Highness the Prince of Wales, with power to approve a deputy appointed by the Council. A Council of Vice-presidents to consist of thirteen members elected by the Executive Council from those deserving of distinction from advancing horticulture, but none but noble or wealthy individuals (patronising horticulture enthusiastically) to be eligible. An Elective Council of thirteen elected by the votes of the members for seven years, vacancies to be filled by the Elective Council nominating the most likely person or persons for the vacancy or vacancies, whose election shall be consequent upon the votes of the subscribers, provided the nomination does not receive the approval of the Council of Vice-presidents and President. When those approve the nominations of the Elective Council, that body shall by vote fill up vacancies in its ranks. The Vice-presidents' Council to make suggestions to the Elective Council upon subjects it may see fit, which the latter shall consider and take such action upon them as in their opinion would be for the interests of the Society. The Elective Council shall transact all the Society's business, having full control of departments; and all its meetings public—open to reporters.

Fellows subscribing £5 5s. to have two ivory tickets, each ticket admitting two persons to all the Society's meetings, shows, gardens in London or elsewhere, promoted by the Society, with copy of journal, and the right of nominating one candidate to the school of horticulture, and five votes upon an election. Fellows subscribing £4 4s. to have one ivory ticket, admitting two to all the meetings, shows, and garden of the Society, two tickets admitting to all shows and garden, with copy of journal, right of nominating a candidate for admission to school of horticulture, and four votes. Fellows subscribing £3 3s. to have three tickets (one ivory admitting two) for all shows, garden, and meetings, with copy of journal and three votes. Fellows of £2 2s. to receive an ivory ticket admitting two, and one ticket of admission to all the meetings, shows, and garden, with copy of journal and two votes. Fellows subscribing £1 1s. to have ticket for all meetings, shows, garden, with copy of journal and one vote.

No Fellow to have any right to cuttings, seeds, or plants, nor any produce or result of the Society's garden or labour, but the whole produce of the Society's garden to be disposed of to the best advantage for the general benefit of the Society.

Provincial horticultural societies contributing £10 10s. per annum to receive the services of a judge appointed by the Royal Horticultural Society, and three silver and three bronze medals, with copy of journal, and ten votes. The subscription being given in the name of the committee of the society wishing for union with the Royal Horticultural Society by their secretary. Societies subscribing £5 5s. per annum to have the services of the Society's judge, two silver and two bronze medals, with copy of journal, and five votes. Societies subscribing £4 4s. to have services of judge, one silver and two bronze medals, with copy of journal, and four votes. Societies contributing £3 3s. per annum to have services of judge, one silver and one bronze medal, with copy of journal, and three votes. Societies contributing £2 2s. per annum to have one silver and one bronze medal, with copy of journal, and two votes. Societies subscribing £1 1s. per annum to have one silver and one bronze medal, and one vote. The medals in the two last instances to be awarded by a judge appointed by the committee of the respective society, and approved in his award by at least one Fellow of the Society.

Gardeners' institutes or improvement societies contributing £2 2s. per annum to have presented one silver medal, which shall be awarded by the votes of its members, choosing three persons to adjudicate upon the papers read before the members of the institute, who shall award the medal to the writer of the paper which in their opinion appears most deserving, but the Royal Horticultural Society shall have the right of rescinding any award which shall be found undeserving, advising the institute to select other two for distinction, and upon the three being submitted to the Royal Horticultural Society the latter shall name the most desirable, and the medal shall be awarded accordingly. The institute to receive copy of journal and have two votes. Institutes contributing £1 1s. to have copy of journal and a bronze medal for awarding to the writer of some approved paper read before the Society, and one vote.

All voting to be by voting papers, stating the cause and object of the election, and forwarded to every Fellow, society, or institute entitled to vote, which filled up are to be returned to the Secretary. The voter not to sign his or her name, but

distinguish by marks X prefixed to the name of the candidate or object voted for the desire of the voter in marks he may be entitled to. Number upon the voting paper will be sufficient to prove the voter's right to vote, checks being kept by the Society.

All students passing the examination of the School of Horticulture to be admitted Fellows free for three years, conferring the privileges of a guinea-subscribing Fellow, but without right to vote, except by contributing £1 ls. per annum.

I have only to say a few words in respect of gardeners. They ought to contribute of their own accord and not have any inducements held out to them by their employers being Fellows.—G. ABBEY.

VEITCH'S AUTUMN BROCCOLI.

This variety of Broccoli sent out by the Messrs. Veitch seems to me to be quite distinct from any other I know, and, like the Autumn Giant Cauliflower, is a grand acquisition to our list of autumn and early winter vegetables.

Having been once or twice "smiten" with the glowing descriptions of some newly-introduced vegetable, but found after trial to have been "bitten" by them, I did not last spring order this Broccoli; but my friend Mr. Louden, The Quinta Gardens, kindly sent me a number of plants for trial, and these have turned out all that has been said of this Broccoli. The stem is short and stout, the heads well "protected," close, and compact, and of excellent size for table use. I cut the first early in November, and am still cutting as wanted now (December 22nd.) We had 10° frost in November, and while numbers of Autumn Giant Cauliflowers were destroyed, this Broccoli was uninjured.

By making an early and late sowing of this Broccoli the cutting season might be much prolonged. To those who have not grown it the past season I would say, Do so next, and you will not be disappointed. I may add that Snow's Winter Broccoli is now (last week of December) coming in, and although useful, cannot for a moment compare with Veitch's, the heads of Snow's being rather open and yellowish in colour.—JAMES ADAMSON, Brynkinnall.

NOTES AND GLEANINGS.

We are informed that at a meeting recently held at Carlisle it was decided to offer £1000 in prizes at the INTERNATIONAL Show to be held in September. We are glad to learn that the Committee have met with much encouragement and many supporters, and they confidently expect that the Carlisle Show will be a great success.

"J. N." states in reference to the HARDINESS OF LYCOPodium DENTICULATUM recently alluded to by Mr. Luckhurst, that it does not succeed well in his garden in Cambridgeshire, and asks if Mr. Luckhurst will state how many degrees of frost the plants he refers have endured without injury.

At a recent meeting of the SCOTTISH SEED AND NURSERY TRADE ASSOCIATION an important discussion was conducted as to the best means for securing the sale of unadulterated seeds. Mr. D. Cross, Glasgow, was elected President of the Association for the ensuing year; Mr. Muir Crawford, Leith, Vice-president; and Messrs. Syme, Mackintosh, J. Walsh, Laird, Edinburgh; Hunter and Sadler, Glasgow; Ballantyne, Dalkeith; Alex. Cross and Hope, Leith; and Palmer, Annan, were appointed the Acting Committee. On the motion of Mr. Sadler, Glasgow, it was remitted to the Acting Committee to consider the propriety of drawing up, in conjunction with the law agent of the Association, a non-guarantee clause for seed to be adopted by the members of the Society.

It is seldom that APPLES are afforded the assistance of SOUTH WALLS to ripen them, yet some of them cannot be had in perfection in the open garden, notably the Calville Blanche. The plan of growing this distinct and desirable Apple as adopted by Mr. Haycock at Barham Court, Maidstone, is highly worthy of notice. Good crops of it were growing on horizontal cordons trained by the sides of the walks, but the best were on a wire trained about a foot from the ground and the same distance from the south wall of the garden. Those trained the heat reflected by the south wall was utilised by the fruit without the trees encroaching on the wall's surface. Neither does a strand of wire stretched in such a position interfere with the crops of the border, but it does enable Apples of splendid quality being produced when they cannot be had

of similar excellence by the usual mode of growing them in exposed places. The plan is of course equally adaptable to Pears, and it appears worthy of being more extensively adopted. If it answers, as it undoubtedly does answer, so well in the south, it may be supposed to be of still greater value in colder localities.

THE COLD WEATHER in London which suddenly set in immediately before Christmas, changed as suddenly after the "festive day." The temperature has been unusually high for several days, higher indeed than the average for the same period for a great number of years past. Autumn-sown crops, both of vegetables and flowers, are very forward, and fruit buds are swelling freely. Cauliflower plants in frames and under hand-lights are much larger than they should be, and it is feared that many of the plants will "button." Those who have plants in this state will do well to sow seed at once under glass, and thus make timely provision, preventing as much as possible the prospective blank in the supply of an important crop—early Cauliflowers.

MR. MOORMAN writes to us as follows in reference to the SCARCITY OF HOLLY BERRIES:—"We have six large trees, which are noted for their bearing propensities. During the eight winters I have had them in my charge I have never known them without a crop before this year. One of my workmen says we ought to have dug around the trees and watered them, for quantities of berries were swept up during the past summer. Doubtless the drought had something to do with the failure, but I also think the severe frosts occurring during their blossoming period was the principal cause of the scarcity. The trees in question, which cast their berries in a green state, were growing under some large Oaks and may have been sheltered.

A CORRESPONDENT writes to us as follows:—"I think in these days of elections of fruits and flowers that an ELECTION OF GRAPES would be both interesting and useful, and would prove a guide to many amateurs and others who contemplate planting, but who are bewildered amongst such a number of varieties and likewise conflicting opinions. Perhaps some of your readers will kindly enlarge on this subject."

MR. CHRISTIE, The Gardens, Orton Hall, Peterborough, communicates his success in CUCUMBER-GROWING. Last year he cut nearly two thousand Cucumbers from one span-roofed house 30 feet long by 11 feet wide. The sort he grew was Dixon's Imperial Frame; fruit about 15 inches long, of superior flavour. He grew Telegraph in the same house from seed sown ten days before the Imperial Frame, yet the latter was much the earliest in use, and he recommends it both for summer and winter culture.

ROSES UNDER UNFAVOURABLE CIRCUMSTANCES.

MUCH valuable information has been elicited through your Journal for the benefit of those Rose-growers who are favoured with fairly good soil and situation; but others also wish to know how much can be done by skill and proper selection for such unfortunate as are on a barren sand and in a smoky cold situation.

I have with scant success tried numbers of Roses recommended for smoky situations, but my experience does not accord with the lists sent out by nurserymen for such situations. The only Roses which will thrive and bloom satisfactorily through plentiful manuring are Gloire de Dijon, Prince Camille de Rohan, Baronne de Rothschild, Comtesse of Oxford, Général Jacqueminot, Fisher Holmes, John Hopper, Madame de Cambacres, Victor Verdier, Anna Alexieff, and Duke of Edinburgh, all on the Manetti, and Souvenir de la Malmaison on its own roots.

My object in writing is to give and to draw forth experience from those in like localities and placed on dry barren sand. Doubtless many other Roses besides those named may grow equally well, and hoping to elicit information I sign myself—SAND HILLS.

MRS. PINCE'S BLACK MUSCAT GRAPE.

I HAVE grown the above-named Grape for a great number of years, both in an intermediate or mixed house and in a late house, and, except on one occasion, the Grapes in the earlier coloured better than those in the late house. We have generally had fruit hanging in the late house until April, and the

Vines naturally start growing at that time; but this season has proved too short for the ripening of some sorts of Grapes which were started at the time named. Alicante and Lady Downe's have finished fairly, but Mrs. Pince is badly coloured, and even White Tokay is not what it should be for hanging late. We have resolved to start our late house a month earlier this year, and do not think that Lady Downe's or Alicante will suffer by the change.

With regard to there being two varieties of Mrs. Pince, I scarcely think there is sufficient grounds for supposing that to be the case. I believe I suggested some two or three years ago in these pages the possibility of there being two varieties, my remarks being based on the apparent difference between Vines growing in an intermediate house and others in a late house. Since then the Vine in the late house has become much more vigorous, the berries swelling more regularly, and in every respect except colour are quite equal to those on the Vines in the other house.

I have found Mrs. Pince a Grape that is much slower in starting, and keeps lagging behind in all stages of its growth when grown with other sorts, but more especially at the ripening period. I think if it was grown in a house by itself, and received suitable treatment, it would reward the cultivator. Would any who have had the opportunity of growing it alone give us the benefit of their experience?—R. INGLIS.

LIMATODES ROSEA.

WITH no special accommodation for Orchids I do not at present grow this plant, but I mentioned it as a very desirable Orchid, unapproached in my opinion in loveliness by any other of its season, except perhaps by Calanthe Veitchii, the result of a cross by Mr. Downy between Calanthe vestita and Limatodes rosea. Yet I have previously had experience with the plant and never found it difficult to cultivate, hence my surprise at reading that so able a cultivator as Mr. Douglas could "make nothing of it."

It was treated the same as Calanthe vestita was—namely, potted in March or when the last signs of growth appeared, for on no account must it be allowed to root into the old effete soil. All the old soil and roots were removed. The pots were well drained, and the compost used was composed of equal parts of very fibrous loam and sandy peat, with the smaller particles or dust rejected, a third part in equal proportion of old cakey or dry cowdung and leaf soil, with a half part or piece of charcoal or potsherds, the whole well mixed together, potting rather firmly and rather high.

The plants were then placed at the back of a Pine stove, a succession house, having Vines upon the rafters at every 5 feet. The plants of Limatodes would be not more than 3 feet from the glass, and as the Vines were introduced in early March a slight shade was afforded. Water was given rather sparingly until roots were emitted freely into the fresh soil, and after that took place and the growth was free the supplies were very liberal, and after the leaves were full-sized liquid manure was given twice a week—diluted drainings of a dunghill—of the same strength as applied to some Fig trees. The Limatodes were sprinkled overhead twice a-day, and the house was damped at noon.

In September the plants were placed on the back fine of another Pine pit and fully exposed to light. They were kept well supplied with water and liquid manure until the flower escapes appeared from the bases of the pseudo-bulbs, when the watering was gradually reduced; but they were still kept moist, not being allowed to go dry until they had almost ceased flowering, for too sudden dryness tells disastrously upon the flowers.

After this, as long a rest as possible was given, keeping dry in December, January, and February, and until growth commenced, but not so dry as to cause the pseudo-bulbs to shrivel. The summer temperature was 65° to 60° at night, 70° to 75° by day, up to 85° or 90° occasionally, and in winter 65° to 70°, down to 60°, or lower in very cold weather.

The reason that I do not now grow Limatodes rosea is, that it does not usually do well in mixed collections of stove plants, but with the culture I have described it never failed to thrive satisfactorily.—G. ABBEY.

THE SIBERIAN PEA TREE.

THIS tribe of hardy yellow-blossoming plants deserves a place in every shrubbery. They are as hardy as Oaks. In

early spring they are covered with a shower of golden-yellow Pea blossoms.

I have two varieties, the arborescens and the Chamlags. I much prefer the latter, both for its miniature tree form and its richer and more profuse bloom. As a dwarf tree either in leaf or flower, I know of no plant which so exactly takes on this tiny form of not above 4 or 5 feet high. Our public grounds should not fail to present these shrubs to the study of the people.

The Chamlags grafted on the arborescens is said to make a very pretty weeper. I have never seen it; but I doubt not, like many plants, it would gain by the stature and force of the more vigorous relative. This saves time and the torment of having every plant bobbed to the flat-topped style, in which the average gardener delights.—(*American Gardener's Monthly*.)

ARDISIA CRENULATA.

THIS is a most appropriate plant for decoration at the present season when Holly berries are scarce. A few plants of the Ardisia in 6-inch pots are valuable for table decoration and for the ornamentation of rooms in general. Larger plants can be placed in the entrance hall, &c., where their scarlet berries and green foliage will produce a charming and seasonable effect.

The plants are easily propagated by cuttings placed in a good bottom heat, but I find a ready way of providing a good stock of plants is to sow the berries in the spring and plunge the pot or pan, as the case may be, in a hotbed or heated pit, never allowing the soil to become dry afterwards. They take a considerable time to germinate. When the seedlings are large enough to handle pot them off singly in small pots in a mixture of peat, loam, leaf soil, and silver sand, and grow them on in a heat of 70° or 75°. The old plants will require to be repotted and grown-on in the above heat so that the berries may be well coloured before autumn, when the plants will last good all the winter if they are accommodated with a greenhouse temperature. The berries can then be picked off, washed and sown, if the stock is required to be increased.—J. A.

NEWSTEAD ABBEY,

THE RESIDENCE OF W. F. WEBB, Esq.

THERE are but few places of such historic interest as the subject of the present notice. Newstead Abbey and the name of Byron, the celebrated poet, are so intimately connected that it is impossible to think of one without the other. Newstead has not only been the residence of a long line of a noble race, but kings, sculptors, poets, statesmen, philosophers, and other great men have done homage to its ancient shrine. Not the least of the long list of worthies who have here found a hospitable home is the great philanthropist, missionary, and discoverer, Dr. David Livingstone, who about ten years ago visited the Abbey, and during his stay wrote his last great work, "Travels on the Zambesi."

Newstead Abbey was founded as a Priory of Black Canons in honour of the Blessed Virgin Mary in 1170 by Henry II. From that time until nearly the middle of the sixteenth century there is little or nothing recorded of its history; no doubt for the simple reason that there was nothing worth recording. However, successive kings were frequently the guests of the abbot—probably having come to enjoy the chase. At the dissolution of the monasteries the Abbey was surrendered to Henry VIII. in July 1539, and the following year it was granted to Sir John Byron, at that time Lieutenant of Sherwood Forest and Constable of Nottingham Castle. After the monks had been forced from this sanctuary, where, according to tradition, the poor, the sick, and the weary traveller had at all times for centuries found an asylum, it was converted into a splendid residence by its noble owner; but the church was suffered to decay. The west end is still a majestic ruin and an elegant specimen of the Early English style of architecture. The house is quite in the antique style, with towers and battlements; it was thoroughly restored about forty-five years ago, having suffered much by the neglect of the two last previous Lords Byron. The Byron family is very ancient, and had large possessions near Rochdale in Lancashire, where they had their principal seat till after the Reformation, when they obtained a grant of Newstead. Charles I. raised Sir John Byron to the peerage in 1643, but as the Byrons were active partisans in the cause of royalty their estates were sequestered by Parliament, but afterwards restored to them by Charles II. From the time of Charles II.

until the accession of William the fifth Lord Byron, commonly called the "wicked Lord," there is nothing of interest to relate of the Abbey or its inmates. The "wicked Lord" died without issue in 1786, when he was succeeded by his grand-nephew, the illustrious poet.

George Gordon Noel Byron, sixth Baron Byron, of Rochdale, was but ten years old when he succeeded to the title and estate, and at that time he was in the Grammar School at Aberdeen, where he received the rudiments of his education. The old lord had permitted the Abbey and grounds to fall into a miserable state of decay and ruin, and he terminated his wild and graceless career almost alone, without a sympathising friend, in the only room in the Abbey which did not admit the wind and the rain.

Soon after this event young Byron's mother sold her effects, which only realised £74 17s. 4d., she having been obliged to endure great pecuniary difficulties in consequence of the licentious habits of her husband, who had fled to the Continent while his only son was still an infant. She and the youthful poet arrived at Newstead, where they took up their abode in the year 1798. The first sight of the dilapidated Abbey made an impression on the mind of Byron that could not be effaced. These impressions continued, and formed the text for some of his famous poems. I will here give one quotation—

"Through thy battlements, Newstead, the hollow winds whistle;
Thou, the hall of my fathers, art gone to decay;
In thy once smiling garden the Hemlock and Thistle
Have choked up the Roses which late bloomed by the way."

Byron came of age on the 22nd of January, 1809. Previous to this he had formed associations which were not in the least degree in harmony with the dignity of his genius and the high position he ought to have taken in society. His companions and associates were of the lowest order, and they indulged in wild and extravagant games. He kept the wolf and bear that he had with him at college at each side the hall door, and when he and his companions were tired of other games, these animals came in for a good share of torture. When he came of age the event was celebrated with a good deal of merry-making. An ox was roasted, and she flowed in a perpetual stream. The Abbey was thrown open, and people flocked from all quarters, but Byron dined on eggs and bacon and ale. Soon after this he set off on his foreign tour, but returned to England in 1811, and published some of those poems which immortalised his name. He subsequently married Miss Milbank Noel, but the union was not productive of happiness, and he soon again bid adieu to the shores of Britain. His pecuniary difficulties increased; and though he had vowed he would never part with the Abbey, yet in 1818 it was sold to his old friend and school-fellow, the late Colonel Wildman, for £100,000. This gentleman set about putting it in thorough repair, and spent a fortune in its restoration. At his death it was bought by its present proprietor, W. F. Webb, Esq. Byron died at Missolonghi, in Greece, on the 19th of April, 1824, at the early age of thirty-six.

Newstead is delightfully situated about six miles south of Mansfield, and eleven from Nottingham. There is a private station on the Midland railway for the use of Mr. Webb, his family, and visitors to the Abbey. As soon as the visitor alights from the station he enters a long avenue of Wellingtonia giganteas; they are planted alternately with Limes and Chestnuts, and in a few years will make a splendid approach to the Abbey. At the end of this avenue, which is about a mile long, we reach the lodge, the entrance to the Newstead demesne. There is nothing special in the appearance of the lodge; it is a plain unpretentious building, wearing an air of comfort, with the walls covered with Roses and Pycnanthas. Another quarter of a mile and we reach the Abbey—

"An old, old monastery once, and now
Still older mansion, of a rich and rare
Mix'd Gothic, such as artists all allow
Few specimens yet left us can compare
Withal: it lies perhaps a little low,
Because the monks preferred a hill behind,
To shelter their devotions from the wind."

The Abbey is charmingly situated and commands some pleasant views of the surrounding landscape. Nearly in front of the mansion there is a spacious lake, thirty acres in extent, supplied by the river Saen. Formerly the borders of the lake were thickly wooded with majestic trees, but the "wicked Lord" cut them down. On either side there is a miniature fort built by the poet's great uncle, and by him mounted with cannon. The "wicked Lord" having been formerly in the navy he called this lake the Mediterranean Sea, and filled it

with miniature craft, and carried on mimic naval fights between his lilliputian fleets. The fort, the nearest to the Abbey, is now converted into a useful cowshed, which is admirably concealed by the fort walls. Near to this spot Mr. Webb has erected commodious stables, built in a style of architecture as near as possible to correspond with that of the Abbey. The fort on the opposite side of the lake is used as a boat house. Byron when at Newstead was very fond of bathing in the lake and rowing on its placid waters, often accompanied by his faithful dog "Boatswain." He would precipitate himself into the water, when his dog would rush after him, and seizing his clothes would drag him ashore. The water escapes from the lake by a cascade, and as it murmurs downwards it becomes picturesque and beautiful. After passing underneath the carriage drive the stream is formed again into another sheet of water near to the pleasure grounds.

We now enter the interior of the grounds, and starting from the ruin of the old church we find our way into what is called the "monk's garden." It is a sort of shrubbery and wilderness, just in the form as it was left by the monks. It consists of cross walks overshadowed by tall Elms and Sycamores, having an undergrowth of Yews and Laurels. Here also is an ancient Clematis, perhaps the oldest in England, clinging to one of the tall trees, with a stem as thick as an ordinary man's body. We emerge out of this grove on to the broad terrace walk, 720 feet long by 15 broad. It runs parallel with the herbaceous border that was laid out by the monks, and never altered in the style of planting. To infuse a little life and freshness into the border a few Roses, Tritonias, and Paeonias have been introduced. The old wall is furnished with Pears planted by Col. Wildman. About half way on the terrace there is a semicircular opening in the wall, from which we catch a glimpse of the Forest Pond. Turning to the right the Eagle or Mirror Pond lies at our feet. It is a splendid sheet of water, so constructed as to represent a mirror. It is about 100 yards long and 50 broad. The grass borders, which represent the frame, are beautifully arranged, and fall down to the water's edge with a regular gradation. The pond is 9 feet deep, with a perpendicular wall all round, and stone steps at each corner, which lead to the bottom. It is fed by springs that rise in the park, and on a fine day the photographic appearance of the Abbey on its placid surface is very beautiful. It was here that the brass eagle was discovered that is now placed in Southwell church.

The grounds in proximity to this pond present a unique appearance. They were designed by Le Nôtre, the celebrated landscape gardener, and are laid out in square beds and walks in the same style as Hampton Court and Versailles. As we wander on this terrace we next reach a flight of rustic steps that lead down to the "Devil's Wood." It was formed by the fifth or "wicked Lord," and is characteristic of the man. The walks are narrow, overshadowed by lofty trees, which give it a sombre aspect. It is in this grove that the twin Beeches were growing on which Byron inscribed his own and his sister's name during his last visit to Newstead in 1814. These two trees were growing with youthful luxuriance at the time Byron carved his name on one of them. The one on which the inscription was made afterwards began to droop, and exhibited symptoms of decay. Mr. Webb, in order to preserve this relic of the poet's fond destruction, had the tree taken down in 1861, and that part containing the inscription was placed in the Abbey under a handsome glass case, along with other Byron relics. The inscription can still be traced as follows:—

"BYRON,
20 SEPTEMBER, 1814.
AUGUSTA."

In this ancient grove are two satyrs "behooved and behorned," male and female, playing with a child, which the "wicked Lord" brought from Italy. They are placed on pedestals where the walks intersect each other, and are such grim-looking objects that the neighbouring peasantry regarded them as "the devils the old lord worshipped." As we pass from under the shadow of the old trees we reach the east terrace. There is the "Devil's Wood" to the right, and on the left a broad border, which forms the boundary of the pleasure grounds. A broad border 6 or 8 feet wide is covered with Ivy, and down the centre is a row of Pinus Douglasii. On the south terrace, which skirts the southern portion of the "Devil's Wood," there is a row of Thujoopsis dolabrata producing a fine effect. Retracing our steps a little we again come to the Mirror Pond above described. Turning to the left there is another fine sheet of water known as the Stew Pond. It is

said that here the monks preserved the fish for their private use. It is in the same state of preservation as it was at the dissolution of the monastery. It is flanked on each side by a row of magnificent ancient Yews. They have been planted for upwards of seven hundred years, and exhibit no signs of decay. At the bottom end of the pond there is a fine bank of *Cotoneaster microphylla*.

At the top of the Stew Pond is the Monks' Well, which is deserving of mention on account of its historic associations. The quality of the water is much esteemed, being singularly clear, sparkling, and of great purity and sweetness. The monks formerly fetched their water from this well, and it is now used in the Abbey. It rises out of the sand rock, and is of the same temperature all the year round. The fernery is situated in a shady portion of the grounds. It was designed by Mrs. Webb about twelve years ago, whose taste in this respect is of the very highest order. It is constructed of stones taken from

the ruins of the old church and Derbyshire tufa. There is a raised embankment with a high mound in the centre. The stones are so arranged as to leave space for Ferns, of which there are many hundreds. On the east front of the Abbey there is the flower garden, laid out in long narrow beds, and in the recesses of the curves are other smaller beds. No doubt in the summer season this garden is bright and gay, but at the time of my visit, the middle of dull November, the beds were cleared of their summer flowers. At the end of this square of grass and just opposite the semi-detached part of the building is the French garden. It is a small space enclosed by a low balustrade, and laid-out in quaint-shaped beds edged with Box in the Louis Quatorze style. Some of the spaces between the Box are filled with different-coloured material, such as white spar, blue slate, red brickdust, &c. This little garden contrasts well with the other part of the grounds, which are mixed in the style they were laid out.



FIG. 2.—BOATSWAIN'S TOMB—NEWSTEAD ABBEY.

At the opposite end of the flower garden and near the ruin of the old church is the monument erected by Byron to the memory of his faithful dog, "Boatswain." Near the tomb stand two grand old Yews and a fine specimen of Cedar of Lebanon. Byron manifested more sorrow at the death of his dog than he did at the death of his mother. The monument stands on a base of six steps, crowned with a lambent flame and panelled in white marble. The monument, the Yews, the Cedar, and the monks' burying ground adjoining, give the spot an air of gloomy solemnity. The monument, of which an engraving accompanies these notes, bears the following inscription on one of the panels:—

"Near this Spot
Are Deposited the Remains of One
Who Possessed Beauty without Vanity,
Strength without Insolence,
Courage without Ferocity,
And all the Virtues of Man without his Vices.
This Praise, which would be no meaning Flattery
If Inscribed over Human Ashes,
Is but a just Tribute to the Memory of
BOATSWAIN, A DOG,
Who was Born at Newstead Abbey, May, 1803,
And Died at Newstead Abbey, Nov. 18, 1808."

On the south front there is a stone terrace with flower beds laid-out and margined with raised stone edgings. From this terrace a broad sweep of grass runs down to the lake. On this

lawn there is another interesting object to the visitor; it is the Byron Oak which was planted by the poet.

On the opposite side of the lake there is a flourishing *Wellingtonia gigantea* planted by Dr. David Livingstone during his lengthened visit to Mr. and Mrs. Webb in 1865-6. The room that Livingstone occupied in the Abbey, and the table that he wrote his last work on, remain just as he left them. There is no room in the Abbey of greater interest to the visitor. Near to the *Wellingtonia* is a *Cedrus atlantica*, planted by Mr. Stanley, whom I heard relate, in the Town Hall, Mansfield, an account of his travels, and "how he found Livingstone."

Passing on to the kitchen gardens, we cross over a small ravine on a rustic bridge that brings us to the American garden. It is a large piece of ground, formerly the wilderness, but now planted with choice *Rhododendrons*. In the spring season they must be beautiful. The American garden is separated from the kitchen garden by a hedge of *Thuja gigantea*. The hedge is 16 or 18 feet high, and has been planted nine years. The kitchen garden is in all respects in character with this ancient and noble place. It is in two compartments, and covers 2½ acres. We first make our way to the vinerias. The first block is 60 feet long and 17 feet wide, in two divisions. The first division had all Black Hamburgs in fine condition. The Grapes were well coloured, the berries of more than

average size, and altogether they were most beautifully finished. One thing I noticed—the Vines at their winter dressing had never had any of the old bark rubbed off, and they were quite free from spider, mildew, and the other ills the Vine is heir to. The second division contained a mixed collection, including Trebbiano, Muscat Hamburg, Clampton Hamburg, Treutham Black, and Duches of Buccleuch, the latter having very small berries; but Mr. Lawrence, the head gardener, informed me that they were intending to destroy it this winter. The next house was just erected. It was 50 feet by 17, and was for late Grapes, such as Lady Downe's and Black Alicante. The border was being made, and from the quality of the material employed, and the skill Mr. Lawrence is able to bring to bear on their culture, superior Grapes may be predicted. Between this house and the before-named vinery there is space left for a range of Peach houses, which are to be erected shortly. We next enter a range of span-roofed houses 76 feet long, in three compartments. The first was used for Melons during the summer. The crop had been excellent, and the sorts grown were Golden Gem, Hybrid Cashmere, and Little Heath; the fruit of the latter weighed from 6 lbs. to 11 lbs. each, and three fruits to a plant. The second compartment was partly devoted to winter Cucumbers, Telegraph and Master's Prolific being the most useful for the purpose. One half of the house was occupied with dinner-table plants. The third part contained a useful selection of plants required for the embellishment of the Abbey. I specially noticed as being worthy of mention a fine selection of Ferns, including *Lomaria gibba*, *Pteris argyrea*—a very fine batch, *Croton*s in great variety, *Begonia*s, *Diefenbachias*, *Poinsettia pulcherrima planifolia*, *Dracaenas*, *Pandanus*, and many other fine-foliage plants, every one useful for the purpose for which they are grown. There was also a good specimen of the curious *Testudinaria elephantipes*, a plant only met with occasionally.

Several lean-to pits are used for forcing flowers and Asparagus, but now filled with *Alternantheras*, *Bouvardia jasminoides*, and *B. Yrelandii*. Another most useful plant for the dinner table, and also for cut flowers, is *Abutilon Ecule de Neige*, which is grown here in large quantity. Several ranges of cold pits were filled with *Echeverias*, and cold frames were full of Lettuces for winter salads. Large breadths of winter vegetables bore the traces of superior culture and good management. There is a broad gravel walk down the centre of the garden. Ribbon borders were planted along each side during the summer, backed up with pyramid Apples and Pears. The gardener's cottage stands at the east corner of the kitchen garden, the back part overlooking the garden, and the front a portion of the pleasure grounds. The walls were mantled with Roses and other climbing plants, and both internally and externally the appearance of comfort was manifest.

I have now finished my journey through this grand old place, and, apart from its Byron associations, it is of great interest and well worthy of a visit at all seasons of the year. The culinary and fruit departments are undergoing a decided improvement, and the plants are in a flourishing condition. Mr. Lawrence has already made his mark on the place, and progress was everywhere apparent.—Q. R.

APPLE ELECTION.

As this is one of my kindred subjects and emanating from such an authority as is Mr. Robson, I believe if a returning officer can be procured there is no danger but the readers of this Journal will have a treat, and a knowledge of the Apple they had not hitherto possessed. It is with very great caution that I offer any suggestion on Mr. Robson's ten classes, still I am inclined to think they are a little too numerous. I would suggest—first, Summer dessert Apples six or eight varieties in order of ripening or marked according to merit; Winter dessert Apples the same, but as they are more numerous, better say twelve kinds or so in order according to merit. Then baking summer or autumn Apples, six, eight, or ten, for keeping and baking qualities, and winter baking Apples after the same manner. This arrangement, if carried out, I believe would give general satisfaction. It would meet both exhibition and utilitarian purposes.—B. G., *Cu. Down*.

POINSETTIA PULCHERRIMA.

At this season of the year the brilliant flowers of *Poinsettia pulcherrima* put all other plants in the shade, but growing it in a pot, as is generally the case, cannot bring it out in its true

character; in a pot a plant produces a few dozen flowers, but on the wall we have 250 or more dazzling heads.

I planted out one plant about fourteen years ago against a back wall, it now covers a space of 24 square yards and has 250 flower heads. Its beauty when the sun is out quite dazzles the eyes, and viewed at a distance it looks like a wall of red fire. This plant seems to do so well that I have to take off yearly about 10 square yards to keep it within the house. The treatment it has is simply to leave it alone, except to keep it clean and to tack the shoots to the wall when growing. The fire is discontinued in May up to September, and from September to May the house is kept at about 55°.

I am told that it is the largest plant in England, whether it is the case I should like to know. Perhaps some of your correspondents will state the sizes of any large plants.—K. DRAPER, *Seaham Hall Gardens*.

MADRESFIELD COURT GRAPE.

This is a magnificent Grape when well grown, but in many places it has been cut out because of that evil propensity—its besetting fault—cracking of the berries just as they begin colouring, which has been fully described in your pages in previous numbers.

I had almost committed the rash act myself of cutting it out, but I am very glad I did not do so now, for it produces each season a heavy crop of Grapes with scarcely a cracked berry. For the first two or three years it behaved very badly with me, nearly every berry having cracked before it was ripe, caused, I have no doubt, by the superabundance of sap, as this Vine inherits great vigour and strength in its young stages, and the berries are very thin-skinned. But I now find that when the Vines become established and carry a good crop, and the atmosphere of the house is kept rather dry when colouring commences, there is very little cause for complaints about cracking, and with the roots entirely under control I consider the results would be more satisfactory in the early stages of the Vine. As a market Grape I consider it a first-class variety, its noble-looking berries always commanding a high price.—J. A., *Hill Grove*.

ROYAL HORTICULTURAL SOCIETY.

The last paragraph of the circular lately issued by the Council of the Royal Horticultural Society proposes guinea fellowships without the right of voting. Judging from the tone of very many letters which I have received, country Fellows will not be satisfied with semi-fellowship. Those who live at a distance who will give a guinea to support a Society they believe to be useful, though they derive little direct good from its shows and meetings, have a right to expect the honour of full fellowship, and will assuredly after a little longer waiting obtain it. The first bid for their support was a guinea associateship, a guinea part-fellowship is now offered, a full fellowship is not far off.

The Council have a hard task before them. There was great difficulty in keeping old and in bringing in new Fellows, even when the South Kensington Garden was well kept up. In its present neglected state the difficulty is greatly increased. Let us hope the neighborhood will generally subscribe, otherwise it is not a pleasant reflection, that however economical the expenditure on the garden may be, as long as it is kept open there will be a charge of some £600 a-year for rates and taxes—a severe tax for this land of now little use if paid out of horticultural money.

I hope that those who believe in guinea fellowships, and who are canvassing their friends through the country will not relax their exertions. A year ago I should have tried to commence this canvass, but was led to believe that the Council were likely to undertake it. Judging from the great number of first-class names collected in two months, a year's work would have given us enough Fellows to make us independent of South Kensington. By this time next year we ought to have completed the necessary number. Strong societies have grown up, starting with supporters less in influence and in number than we already have.

It is now almost necessary to justify the independent course I am taking, though let me say it is no longer I who am advocating guinea fellowships as the one means of making the Society what it should be. I am merely the mouthpiece of very many of the best and most experienced horticulturists of the country of all ranks, who urge me not to let the matter

rest till the guinea fellowship has been accomplished. On a former occasion I had to take independent action, having means of knowing more of the circumstances of the time than some of my friends had. I was so certain that it was for the interest of the Society that the Council of 1873 should be continued in office, that on my own responsibility and at my own expense I circulated the lady Fellows asking for their proxies to support the Council. One hundred and fifty ladies trusted me with their proxies. Twenty more proxies would have carried the vote of confidence and kept in the Council, and this means that the arrangement with the Commissioners on the eve of settlement would have been accomplished, with the result that the Society would now have been free from its debt, free from rent, and with a conditional accession of income, then estimated to amount to £1000, but which I doubt the continuance of. Therefore, having been proved right once, I claim the inference.

I hope that nothing more will be said about turning out the present Council. On more than one occasion there has been great difficulty in finding at all suitable men who would undertake the office. The present work is both unpleasant and thankless. When we get a really good Society with only horticultural work, there will be plenty of first-class men only too glad to serve.—GEORGE F. WILSON.

TOM KING'S GARDEN.

AMONGST the most pleasant episodes connected with the garden are instances of the power of its attractiveness over those to whom at first sight it might be thought to have no charms. We read of martyrs to the love of flowers—those who have lost their lives in the pestilential swamp, and have braved death in the wild beasts' haunts. We are reminded of others who have endangered their existence by sharing their last drop of water with plants which they have been transmitting by land and sea. Such devotion we note with unbounded admiration. It evinces a deep-seated burning love for flowers implanted in the breasts of the votaries of botanical science and horticultural enterprise. Yet such zeal on the part of such men does not evoke nearly so much surprise as a triumph of cultural skill secured by any not known to be intimately associated with the gentle craft; hence the surprise—almost incredulity—which followed when the announcement was made in these columns that the redoubtable athlete, whose popular and familiar name is above quoted, vanquished all comers in the principal class for cut blooms of Chrysanthemums at the late Brixton Show.

When the prize cards were placed on that occasion, and "Mr. Lee, gardener to T. King, Esq." had the foremost position, the Judges not only delivered a just but a popular verdict. Mr. King's blooms were not only decidedly superior, but their owner was esteemed as a good neighbour and supporter of the Society. "Do you know who Mr. King is?" inquired an official. "No," was the reply; "well, then," continued the official, "he is the champion." "Yes, that is clear; someone must be the champion." "Oh! you don't understand me. He is Heenan's victor, and we are proud of him. It's true, honour; but don't say anything." A reporter met at times be faithful to the public, and give the exact words of a speaker; and Mr. King being an admirer of flowers, and keeping a competent gardener to grow them for him, was an "item of news" not to be curtailed in its telling. And now it remains for the dual champion to pay the penalty of his floral fame by permitting the many who are interested in his prowess, and who rejoice in his new honours, to be made acquainted with the garden which yields him, all earnestly hope, solid pleasure—real happiness.

Tulse Hill Lodge is a suburban residence—one of many in its district which speak of well-appointed homes and neat and cherished gardens. At the front of the large light-coloured residence is the little enclosure, containing its few shrubs, its bit of lawn, its miniature flower beds, its shady deciduous trees, and its semicircular carriage drive. On each side of the building stand two sentries—Biches, drooping in silvery gracefulness. Next to the public road is a row of pruned Limes, breaking but not hiding the view from the windows. That is the "little front;" but the garden proper is in the rear—an enclosure perhaps 100 yards in length by 40 in breadth, bounded on both sides by brick walls, and terminating in open meadows. The first half of the long slip is a well-kept lawn containing shrubs and flower beds. Prominent are two large beds of Roses. To the inquiry, "Does Mr. King like

Roses?" was received the reply, "Don't he, though? look at 'em," from one who was charmingly innocent of being "interviewed." One look was enough. There were the Roses planted regularly, staked, labelled, and the surface of the ground well mulched with manure, nourished and protected at this period of the year as all Roses should be which are cared for. Yes, it is certain that Mr. King "likes Roses."

Beyond these Rose beds, and partially separating the lawn from the kitchen garden, are the glass structures. The most prominent is a new span-roofed house about 36 feet long and perhaps 18 feet wide, divided into two compartments—above and greenhouse. A first stage for plants passes round (minus the doorways) this house, and is filled with gay-flowering plants, mostly Primulas. The centre is open, and arranged on the ground level are specimen Camellias in large pots. Some of the plants had recently arrived from the nurseries, one plant having cost five and another four guineas, and the rest were much of the same value. On the roof was being trained *Maréchal Niel* Roses—an excellent idea—the queen of winter, the Camellia, being crowned with the queen of summer, the Rose. Than the varieties of these justly admired flowers none associate better and none are more easy to grow. Any amateur may furnish a house and provide for himself during winter and summer a supply of the finest flowers of earth by growing Camellias and Roses, the former in the body of the house planted out or in large pots, the latter covering the roof, their roots being planted outside after the manner of Vines. The roof covered with Roses is not only not detrimental to the Camellias beneath, but is of the greatest value in affording the shade which is indispensable to the well-being of these plants. Mr. King may well plant other free-growing Roses, especially Teas, which will produce the requisite shade for the Camellias, and almost every day in the year he may have "batten-hole flowers" of the most lovely tints and perfect forms.

In the other compartment are tropical plants. The central bed is mostly occupied with a luxuriant Banana (*Musa Cavendishii*) showing a fine cluster of fruit. When this has ripened it is proposed to proot the plant and devote the pit to ornamental-toliated plants of brighter colours and dwarfier stature. Some of these have been already purchased—*Draenas*, *Crotons*, &c., also Ferns and Orchids. An old house is devoted to utilitarian purposes; but a third, a Cucumber house, is a very useful structure. From three Cucumber plants Mr. Lee last year cut upwards of four hundred fruits, and plants are now being raised for the ensuing season's supply. At one end of this house a few Pineas are plunged in the pit, and on the shelf above Strawberries are being forced.

In the garden are vegetables and fruit trees, the only vacant space in the garden being the lofty shaded north wall. *Morrelle* Cherries would grow admirably here, but they are not liked. Plums, some Pears, Currants, and Roses would also thrive if the walls were limewashed to destroy the moss, tining down the white glare with soot to any tint desired. Were this wall covered the garden would be more complete. A garden such as this and similarly cherished cannot fail to afford healthy exercise to its owner, and the hope cannot be withheld that many gardens are as heartily enjoyed and as well cared for as the garden of our "dual champion," the wide-famed and highly-respected "Tom King." Long may he reign to wear the peaceful emblems on his breast—Roses and Camellias, and

"Place them near his soul,
Not in his heart, indeed, but in his button-hole."

—VISITOR.

GARDENING REMINISCENCES OF THE PAST FIFTY YEARS.

HAVING omitted from my notes on page 552 one of the most important features of the whole period—namely, the hot summer of 1826, I desire to make good that omission.

I verily believe that if its effects on the various garden crops had been as duly chronicled as has been done very often since that time, the year mentioned would have stood out as the most remarkable of the present century. I well remember a field of Barley in a remote district the very reverse to an early one, and yet that crop being shaken with the wind and losing a good deal of corn speedily produced a second crop, which ripened the same year in as good a condition as the first. This is very seldom done even in districts more favoured than the one alluded to, and I do not remember a single case where so good an example occurred. I have seen corn standing out till after Christmas in the same neighbourhood,

and on one occasion witnessed some when a heavy fall of snow broke it down—so much for 1826. Unfortunately my recollection of its effects on garden crops is limited to the remembrance of its being an excellent season for small fruits, which were unusually good in quality. Onions, I think, were also good, but Turnips were poor, and pasturage was also much burnt up, and there were great outlets for water in places where that article was never wanting before, while there were numerous cases of spontaneous combustion, and large districts of moor or forest in Scotland were on fire for weeks, creating great alarm. This, I believe has been repeated since, but not to the extent of 1826. I well remember 1846 being a very dry year, and more recently 1868 and 1870 were both so, but the summer of 1826 has left the greatest impression on my memory as the hottest summer on record.—J. ROSSON.

THE PRESENT WINTER.

THE snow hid from view for a time some of our winter pets. Had last summer's drought something to do with our Christmas Roses being in bloom on St. Thomas's day? I mean *Helleborus niger*. It is an unusual circumstance in our northern region. *Eranthis hyemalis* I have not noted so early in bloom before as this season. The Bear's-foot (*Helleborus foetidus*) was a sight with its bundles of flower heads above the snow, and then drooping down to it. *Helleborus viridis* is on its way. *Daphne Mezereum*, *Jasminum nudiflorum*, *Lanterninus*, and others are indicating the spring time, and are very welcome to us at this season. We do not expect the spring just yet. Christmas day has been on the Monday, and some of our old prognosticators have dark forebodings arising from that circumstance; nevertheless we hope on, and if spared we will work and wait.—OBSERVER.

THE CRACKING OF GRAPES—GRAFTING VINES.

"CRACKING is usually attributed to excess of moisture at the roots." So wrote Mr. Cakin on page 557. It is true, but only just half of the whole truth, the other half being a deficiency of foliage to appropriate the excess of moisture, withdrawing it from the bunches and relieving the berries.

Some varieties of Grapes are more prone to cracking than others, owing to the peculiar brittleness or inelasticity of the skins of the berries, and also the same varieties vary in their liability to crack according to their state at the time of the influx of water. Up to the period of being fully ripe the skins of Grapes are at the full point of distension by the swelling of the interior of the fruit. At that stage they cannot resist further pressure from within by a sudden influx of water being absorbed by the roots. After having become fully ripe there is a perceptible shrinking of the interior of the berries, and their skins also become more tough. This shrinking is occasionally very manifest in the case of Black Hamburghs, especially on old Vines, when the berries lose much of their colour in consequence of it. This loss of colour must have been noticed by many cultivators. In August their Grapes have been quite black, but on hanging until November they have "turned brown"—a simple result of the internal shrinking of the berries, taking, as it were, the backing from the mirror and enabling one, as it were, to look through, quite through, the skin.

Now after this shrinking has taken place Grapes seldom crack—that is, so long as the foliage remains on the Vines; but if the borders become saturated with water before the shrinking, cracking almost certainly follows. Grapes intended to keep well must therefore be ripened early, and particularly if the borders containing the roots cannot be sheltered from the heavy autumn rains. With early ripening and plenty of foliage Madresfield Court Grapes will not crack; but late or imperfect ripening, and a deficiency of foliage at the time of heavy rains, almost certainly leads to rupture of the berries.

Mr. Cakin's Lady Downe's were not ripe, and his Black Hamburghs were ripe before the damp days of autumn set in, hence the failure of the one and the success of the other. He is not alone; several others are in the same position this year in consequence of the exceptional mild and wet autumn, which could not have been anticipated. No doubt the linewash was left on the glass too long and aggravated the evil complained of.

As to the substitution of another white Grape for the White Frontignan I should have Buckland Sweetwater. If the Vines are young and the border comparatively new I should plant a

young Vine, but if old I should graft or inerech on one of the older Vines. It is not of much use planting a young Vine in an old Vine border. I have had no experience of the White Frontignan as a stock for other varieties, but I know the Black Hamburgh is an excellent stock for Buckland Sweetwater. A Black Hamburgh stem and roots will support two rods as well as one. Perhaps the safest and simplest form of grafting is bottle-grafting. Take grafts now of stout well-ripened wood. Keep them fresh until the stocks have commenced growing in the spring; then take a deep slice 6 inches long from the middle portion of the graft and a corresponding slice from the stock, and fit them together, tying with tape and surrounding with moss. Place the lower end of the graft or scion in a large bottle of water, filling up the bottle as the water wastes, say until July, when the union will be complete and the graft will have grown half way up the house.—A RETIRED GARDENER.

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 14.

THOSE individuals who have been acquainted with the suburbs of London for the last forty or fifty years have noticed, if observant persons, a peculiar order of succession in the occupancy of the land. In Georgian days districts now covered thickly with houses were more than half rural, and the farmers cultivated Wheat, while herds of good-conditioned cattle grazed on the grassy fields. After a time the cattle began diminishing in number; and though many cows were still pastured, the farmers found it to their advantage to plough up some of the fields, and send from them Potatoes, Turnips, and Cabbages to the London markets. By an easy transition the whole of the land thus disposable came into the hands of professed market gardeners, and even the cows had to withdraw, to be immured in unwholesome houses and sheds, for the best (or worst) part of their lives. The next change would be, that the demand for building sites seriously trenching on the garden ground, the grower of vegetables removed farther away, and gave place to the nurseryman, who generally needs less space. He, devoting himself to fruits and flowers, has most of his plants under glass, and only a few in the open ground at London, drawing fresh supplies from orchards and plantations out in the purer air of the country. In some suburbs, however, even nursery gardens disappear, and only the "florist" as he calls himself survives, with no land at all attached to his place of business, except enough to admit of the erection of one conservatory for the temporary accommodation of the plants he sells off rapidly. Occasionally, as in parts of Westminster and Balgravia, so fast has been the growth of London that this succession has been broken in upon, and land has passed at once from the market gardener to the builder, leaving scarcely a nurseryman or florist behind to tell the tale of other days. The like circumstance is to be recorded of Islington and some northern suburbs.

There is a largish district of London, situate on the Middlesex side of the Thames, within a bend of that river, and bounded on the north by the West End parks and squares, which is notable as having been early occupied by market gardeners. Belonging to the city of Westminster it was originally in the parishes of St. Martin-in-the-Fields and St. Margaret's; subsequently by change of boundary a considerable section has been transferred to St. George's, Hanover Square. Centuries ago much of this land was overflowed at certain states of the tide; it is even yet, despite the large deposits which have been made upon it, below the level of the stream. When it first came under cultivation, indeed, the earth had the character of peat or bog, but it was partially drained by numerous little cuts or streamlets. This region we now know as Millbank and Thames Bank, and some part of it constitutes South Balgravia, with, as must be acknowledged, not at all a desirable subsoil. There are many open places in the district, thickly as it is studded with houses, and here and there factories, but it is difficult to realise that it was formerly fields, gardens, and commons; for Tothill Fields, bordering on St. James's Park and formerly extending towards Millbank, was grazed on for centuries by cattle, and city herbalists gathered Coltsfoot with other wild plants used as medicaments on its sloping banks; and from one of these, which rose to the height of a hill and served as a watchman's station, it had its name of Tot or Tothill (*To tot*, was to look out from an elevation over the lower country). Millbank doubtless had its designation from an ancient mill, which was a landmark to those

moving up and down the river; and much of Westminster proper was garden ground attached to houses down to Stuart times; not to speak of the Spring Gardens, open to the public, and the well-laid-out gardens of Whitehall Palace, though then St. James's Park was wood and swamp. Reminiscences of the past remain in such names as "Gardeners' Row," in Vine Street—for Westminster once had some choice Vines—and in Orchard Street, supposed to mark the situation of the old orchard belonging to the monastery. (The name "orchard," however, may be misleading in a London locality, thus Orchard Street, Portman Square, and is really derived from an estate in Somersetshire.) One speculates as one walks, Where was the garden belonging to Mrs. Cope, the plant from which were bought by the Apothecaries' Company in 1676, and removed to their Chelsea establishment? Was she a pioneer nurseryman—nursery-woman I should say? Vain it is also to seek for traces of Switzer, whose name bespeaks his foreign extraction, and who advertised that he might be seen at the "Sign of the Flower-pot over against the Court of Common Pleas," and at his gardens on Millbank. He was a man of some importance, at least, in his circle of friends, the author of "Iconographia Rustica," and designed various gardens in England and Ireland.

Of the other occupants of garden ground at Millbank during the eighteenth century there is nothing of importance ascertainable, but soon after George III. came to the throne they began to give place to houses and factories, and a huge prison or house of correction was erected on one plot close to the river. A view of Westminster, taken from Millbank in 1807 for publication in "Smith's Antiquities" of that place, is taken from a wood yard, and between this and the streets surrounding the Abbey is shown a patch of garden ground on which men and women are gathering produce. I surmise this is intended to represent a market garden, probably occupying a portion of the land once attached to the old mansion called Peterborough House. In that unsavoury locality, the Horseferry Road, there was a market garden at the commencement of the present century, where there is now a gas factory, this garden being agreeably shaded with rows of Poplars and Elms; and at an earlier date still, being a place of popular resort for tea-drinking and the like, not far distant from that remarkable district "Palmer's Village," which served to furnish some years ago, a sensational article descriptive of a Westminster slum. An old resident remembers a small market garden which would be on the line, I suppose, of the modern Victoria Street; for after Millbank was built on there was much open ground at Pimlico, where Mr. Elliot the brewer had an enclosed space which was actually called a park.

And here, before we proceed further in our exploration of the Pimlico district, let me remind the reader that the first nurseryman in Pimlico was King James I. He had an idea that the culture of silk could be made highly profitable in England, so he obtained from the continent many thousands of young Mulberry trees, and in 1609 spent about a thousand pounds in planting a nursery of Mulberry trees at Pimlico, on the site of Buckingham Palace or its grounds. He also distributed Mulberry plants in various districts of England, and it would appear that at this Pimlico establishment, which was called the "Mulberry Garden," the experiment had a measure of success. We have no weather registers of so old a date as the Stuart period; but some think that as the average English winter was far colder then than it is now, the summers were warmer and more equable, allowing under certain conditions of the breeding of silkworms in the open air. Charles I. in 1629 granted by letters patent to Lord Aston the custody of "the gardens, Mulberry trees, and silkworms near St. James's," for his own and his son's life; the Civil War and its troubles probably put an end to this little arrangement. Are there now any descendants of those Mulberries surviving? Pimlico was open enough in that day; and long subsequently its common, locally known as the "Five Fields," and to which reference has been made in a previous paper, was partially cultivated by Chelsea market gardeners, though more of the garden land lay in the vicinity of the Neat houses. Many living in the neighbourhood can remember when nearly all South Belgravia was fields; and as a proof how sparingly the houses were scattered in this neighbourhood and in the opposite districts of Surrey, an old gentleman has been heard to relate how he had, when out for a morning walk, stood on a hill at Norwood and seen by a glass his children playing in his garden at Pimlico. There are traditions, too, of nightingales having been heard singing in shrubberies at Knightsbridge.

But the story of the Neat houses, so far as the horticultural history of the locality is concerned, goes back to Strype's time, whose entry on the matter is as follows:—"These houses are seated on the banks of the Thames, and inhabited by gardeners, the place being of note for the supplying London and Westminster markets with Asparagus, Artichokes, Cauliflowers, Muskmelons, and the like useful things, which by reason of their keeping the ground so rich by dunging it, doth make their crops very forward to their great profit." The dwellings, however, did not receive their appellation from their neatness or elegance, but because they stood on a part of the manor of Neyte or Neate, belonging to the Abbey lands.* And a later chronicler remarks that this land, originally under water, was kept in high fertility by quantities of stable dung to the amount of sixty cartloads an acre. Liquorice is also stated to have been grown here to some extent. When Lysons wrote towards the close of the century, market gardening was already on the decline in this district, from, as I should conjecture, an increase of market gardeners in more favourable spots. But the statement must surely be erroneous that there was ever as much as two hundred acres of land under cultivation, even if Millbank be joined with the Neat district.

When the last market gardener withdrew from South Belgravia I am unable to say positively, but I believe there were still a few fields there in 1849 and 1850. An entomologist formerly resident in Belgrave Place has told me how he obtained caterpillars of the common white butterflies, for the sake of breeding varieties, from the gardeners across the Grosvenor Canal opposite his house; this would have been about the year 1840. An old house called the White House, once frequented by anglers, overlooking the Thames, long since removed, has been conjectured to mark the position of some one of the Neat houses, but this is doubtful. The ground acquired by Lord Ranelagh when he built his mansion in 1690, and called in old maps "Thames Shot" and "Arnold's Mead," amounting altogether to more than twenty acres, was adjoining or belonging to the Neat estate. "Ebury" is a familiar name in Pimlico to this hour—a reminiscence of an old manor called Eybury, from its watery character, ere the land was under drainage; it is needful, however, to show that "Avery," also occurring here, is no corruption of the former name, but descends from the Avery family, who for generations had a farm in Pimlico. Avery Farm was afterwards subdivided into two or three market gardens. Where St. Barnabas College now stands was, at the close of last century, the Orange Tavern and Tea-garden, and when that establishment failed the ground was still need to produce vegetables for the market. Near this spot was the garden belonging to Mr. Dennis, who removed to the Kioq's Road, Chelsea, near Cremorne, some thirty years ago, I think. He was a nurseryman as well as a market gardener, and his name is associated with one or two novelties.

The departure of the nursery which once occupied the centre of a small square in Pimlico, called Ebury Square, was the final knell of the nurseries in the district; this took place about 1859. The last occupier, I believe, was named Prior; before him Mr. Larkham, and his predecessor Mr. Brown, carries the history back as far as I can trace it. Possibly before the square was built the garden ground was more extensive.—C.

OUR BORDER FLOWERS—GUNNERAS.

PLANTS, like old robes, are liable either to be cast to one side, or stored away for use at another and more convenient time. The world is being sought through for novelties in the way of plants, but it is astonishing how soon a new introduction loses its attractions and is counted as "old." Now that new places are springing up on every side many old plants are also being sought after, and when found they secure favour. But it must be remembered that border flowers require looking after, or many of them may take their departure without giving us any warning.

The family of Gunnera is small. *G. perperna* is figured in the "Botanical Magazine," 2376, and is said to have been introduced in 1688, but I fear that it is among the plants of the past. It is a native of the Cape of Good Hope, yet we have come among us of more recent introduction. From South Brazil we have *Gunnera manicata*, having leaves which with a little support might afford our youngsters a useful shade in the shape of a parasol. *G. esoba* is perhaps

* We believe the Neat houses were so called because the dairymen had their cow houses there. "Neat" means all kinds of horned cattle.—Eds.

the most generally known of the family; it has a Rhenish-like appearance, and by some the acrid stalks are eaten. The Gunners are what are termed coarse-growing plants, and to some tastes may be unsightly, but where change and diversity of foliage are required in large borders, shrubberies, and out-of-the-way places they are antible plants. They are increased by division in spring, and if they have the same treatment afforded that is given to Rhenish there need be no fear of their not succeeding. Large clumps in woodland walks and by the margins of water are very bold and imposing.—*VERITAS.*

FLOWERING PELARGONIUMS IN WINTER.

Our collection of Geraniums has proved of so much value to us since the beginning of October until now, and apparently will continue equally valuable for some time yet, that we cannot refrain from recalling attention to the qualities the Geranium possesses as a winter flowerer. Until the end of November Geraniums of different shades of colour, from pure white to the darkest maroon crimson, were almost the only flowering plants on the side stages of the conservatory; a few Epacris and foliage plants being intermixed to avoid tameness in the arrangements. We have now a goodly number of Chinese Primroses, the earliest Cyclamens, Roman Hyacinths, &c., to take the place of the earliest flowered Geraniums; but those still in flower attract most attention from visitors. One of the vinerias has also been nearly filled with plants more or less in flower during the above-mentioned period, so that we have been at no loss for plenty of flowers of the brightest kind. We have a pretty good collection of Chrysanthemums in flower, mostly in a late Peach house, and very interesting they are; but as long as the Geraniums are to the fore, with many of them with trusses of bloom as large as the individual blooms of the Chrysanthemums, the latter hold only a secondary position with us. Fine as they are as plants for decorating conservatories and show houses, they are probably even more useful when cut for mixing with other flowers in epergnes, glasses for rooms, and for dinner-table arrangements. At the present time Chrysanthemums and Geraniums form the staple of the cut flowers we use; both kinds are arranged so as to stand entirely free from other flowers, so that not only are the beauties of the flowers thoroughly open to view, but the time they last fresh in a cut state is wonderfully extended. Large trusses we employ mostly singly in glasses, merely adding a Geranium leaf or a spray of Fern as a setting. From about the 25th of November I find the pips are less subject to damp-off than they are for a month before that date; in fact, if the plants merely have sufficient water to keep them healthy, a full open truss may be expected to keep in good condition for nearly a month, and two or three weeks longer in a cut state if not allowed to remain too long on the plant before cutting.

As already mentioned, one of the vinerias has been nearly filled with plants; it is a late Hamburg house, and up to this date there are still leaves on the Vines and some fruit hanging. Under these disadvantages the Geraniums have not only bloomed well, but flower trusses are still forming on many of the plants and opening every day. We may also note that some of the newer kinds which were planted out on trial and potted into 5 and 6-inch pots in the beginning of October, have done us good service, some of the finest trusses lately developed being on these plants. Every individual plant is allowed clear standing room, and arranged on the stages without raising the plants higher than they have grown. Every plant is thus directly under the eye, and no harm is done them from overcrowding—a point of importance.

Now as to varieties. We have added about seventy varieties to our collection during the past year, and have been tempted to try a few more of the new sorts this next spring. After that we intend to select and keep only the best; but this is a difficult thing to do unless one is thoroughly imbued with the spirit of the *Auricula fancier* Alphonse Karr paints so graphically. Though one may not have such perfect-shaped pips as it might have, still the truss may be fine or the colour unique; or though the truss may be a long way off the "baby's head" standard, yet the form of the pips or freeness in blooming may hold one's hand from utterly destroying those found wanting in other respects. The varieties we name below we can thoroughly recommend as good for the purpose of supplying blooms during the dreariest months of the year. Vesuvius and other small-trussing varieties we have found wanting; those that have given most satisfaction in all respects are the larger-trussing kinds, some of the newer sorts being re-

markably free flowerers. It is somewhat curious that the darkest crimson flowers and the purple-shaded varieties are the best late-blooming kinds; the deep-shaded, large-trussed pinks are the kinds least adapted for very late work; light pinks, scarlets, and salmon-shaded flowers being useful, but not so good as those possessed of the first-mentioned shades of colour. Of the dark crimson, purple, and cherry-shaded flowers the following have been best: Earl Manvers, Mrs. Haieh, Brutus, Jessica, Colonel Holden, General Outram, Diana (the most useful), Purple Prince, John Fellowes. From amongst the scarlet shades the following are recommended: A. F. Barron, Mrs. J. George, Sir John Moore. Some of the small-trussed kinds with scarlet flowers, though not so showy, are good for cutting from and save the others: we note Mrs. Learcroft, Mrs. Whiteley, De Leseeps, and Richard Dean as good, the first three more especially. Princess of Wales is much liked at this season; it is rosy-scarlet in colour. Our best pink is still Master Christmas. Mrs. Quilter is also good for late flowering. Metalf is also a good sort; but the best large-trussed varieties, as previously noted, do not succeed. Polly King, a salmon-shaded flower, is one of the very best. Rev. S. Hay is a good companion flower. White Perfection is still a good white-flowering kind. White Swan proves a late bloomer and very pure, but the trusses are very small. Of the above, Earl Manvers, Diana, Sir John Moore, and Princess of Wales should be grown in quantity, as they will keep on flowering when all other kinds we know are over.—E. P. BROTHERTON (in *The Gardener*).

NOTES ON VILLA AND SUBURBAN GARDENING.

KITCHEN GARDEN.—With the beginning of the new year, if the weather should prove drier, gardening operations will begin to revive. Not only will it be necessary to sow seeds for the early outdoor crops, but I fear that that can be done much lost time will have to be made up on account of past delay through the continued wet. About this neighborhood amateur are beginning to be adroit about their soil not being trampled, but then I consider it is much better not to interfere with it while so fully charged with water. When it is convenient to work it I advise its being ridged instead of flat-digging it. Ridging not only exposes the soil more, but water will drain and dry from it better than if the surface is left level. The plan of leaving the digging of the soil till the time of planting is fast being given up, even by the humble cottager. The importance of preparing the soil beforehand is now generally admitted. The farmers about here, whose land is highly rented, find it profitable to adopt a system of deeper cultivation than once prevailed. The same system may be applied to a garden; therefore as soon as dry enough dig the soil deeply, and if manure is to be added let it be much more decomposed than is usually the case when digging is done in the autumn. The soil is so beaten down with heavy rains that it should, when a little dry on the surface, be lightly stirred up between young growing crops.

I advise the sowing now of Early Mazagan or Early Longpod Beans, also Peas, on a border exposed to the south. Sutton's Ring-leader, Kentish Invicta, Laxton's Alpha, and William I. are good early Peas. The latter is the strongest grower and is a good cropper. The seed should be sown in shallow drills at this time, or it is liable to rot. Those who desire early Carrots should sow seed in a frame at once. A deep frame is necessary so that the dung may be put inside, and as it is to be deeply covered with soil it need not be previously heated so much as if for Cucumbers. I generally make a sowing at this time in rows as near the glass as I can make, between the Carrot rows of Radishes. These come off in time to allow the Carrots the necessary room. Continue to place Asparagus roots in frames if a accession is wanted. On the surface of this I also sow Radishes. Both the above vegetables require gentle heat.

The ground allotted for Onions must, if it has been previously prepared, be forked over again the first opportunity. While the weather is mild plenty of air must be admitted to Cauliflowers in hand-lights and frames, for if they grow too large before the time for planting-out the check caused by that operation turns them into "buttons." Lettuces at the fronts of walls must be looked after, as slugs are very busy, and if a little lime and soot is applied occasionally to the surface, and pointed-in it will be beneficial. Prepare all kinds of soils and manures likely to be wanted when fine weather comes, and the work at that busy period will be expedited.

FRUIT GARDEN.—Pruning Vines would appear to be one of the most difficult operations for an amateur to do well, not so much perhaps from a want of knowledge, but from a fear of using the knife too freely. I notice in many small houses that too many rods are grown. In some cases they are not much more than a foot apart. Now the Vine is very accommodating, but it can be overcrowded. The rods ought to be 3 feet apart, so that

the shoots can become strong and the foliage large and healthy; then the weight of Grapes will be heavier and the fruit finer than if the canes were trained closely together. I recently observed Vines which had been so much crowded that some of the rods though only four or five years old had gone blind half the way up, though vigorous for the first year or two. The want of light and air were the causes of their producing weak shoots and imperfectly ripened wood, which could not break into growth sufficiently strong to continue from year to year. Therefore thin out the rods freely, and if pruned on the spur system the buds close to the main rod will be plump and able to carry a bunch successively, and if grown on the long-rod system there is a capital chance of the canes being well ripened and the buds prominent, so that they can always be depended on for a crop. As to cleaning the Vines after pruning, I agree with only taking off the loose bark, and not picking and scraping till the fresh bark is exposed to view, for I am of opinion that while the bark adheres to the Vine it is still of essential service to it.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

The continued wet weather has rendered it impossible to work with profit, especially on clay soil. On our light garden soil we have been enabled to complete the pruning of Apple, Pear, Plum, and Cherry trees. Pyramids and bushes have a great tendency to become crowded through continued summer-pruning or pinching of the growing shoots; and if the trees are planted closely together, as they are in some gardens, the evil is apparent in weak unripened wood, and fruit of inferior quality. It requires some degree of courage on the part of the inexperienced to attack his trees with a pruning knife for the small branches, and a hand saw for those of larger growth; but unless this is done sometimes, it is not possible to attain success. Amateurs who are fond of fruit culture, and many are, would do well to take a lesson from an experienced gardener on pruning their small bush and pyramid trees. A few minutes spent in looking at a man proficient in his work would do more to impress the principles of pruning on the mind than pages of instructions. In thinning-out the old branches, it is necessary to remove those that cross others, and it is also desirable to avoid pruning the main branches, so that they become too weak to support their load of fruit; many persons prune the main branches so that they become long cordons of closely-out spurs. They cut the young wood closely back, and annually just shorten the leader. When this goes on for a number of years it will be necessary to cut back the branches, and to encourage them to branch out laterally.

In shallow light soils, or where there is a bad subsoil, it is very desirable to encourage the formation of surface roots, and this is best done by mulching over them with short litter. In some cases it is also best not to fork amongst the roots at all; but if digging is desirable, it must be done in a careful manner. When the surface is loose the roots have the greatest tendency to work into the subsoil, and if the operation of forking the ground is carelessly performed many of the surface roots are broken off.

The late Mr. Robert Fish used to complain much about the injury to his fruit trees from the attacks of small birds, tomits and bullfinches especially. Except the homely sparrow, and a few blackbirds, no other feathered friends visit our garden, and in severe frosts a few Gooseberry and Currant buds are eaten, but other fruits are not touched. Mr. Fish used to syringe his trees with lime whitewash until all the branches and buds were covered with a white coating. He preferred this to mixing the lime with soot, and it used to stick to the trees, even after heavy rains. It also effectually prevented the birds from eating the buds.

MUSHROOM HOUSE.

Materials which are being prepared for new beds must be kept dry during preparation. An airy shed is the best place. There is no danger of the manure becoming too dry. It ought to be thrown up into a heap or ridge for a few days, but when sufficiently heated it should be turned every day, and when dry enough it may be used. Those who are not able to obtain large quantities of stable manure at once, but who must be content with dribbles, ought to spread it out on the floor of a shed until sufficient has been obtained, and always keeping it in the dry. Another plan that has been successfully tried is to place the manure in the bed as it is obtained, and this is certainly the most convenient, for very few gardens are overdone with shed room. It is best to place a thin layer in the bottom of the bed, heating it down firmly, and adding from half an inch to an inch in depth every day. When sufficient depth has been obtained the bed may be spawnd—that is, if the temperature is not likely to rise above 60°, and in a week or so after spawning the surfacing of loam may be added in the usual way. When beds are made up in this way the largest proportion of the properties of the

manure is retained, its valuable constituents not being driven off by excessive heat.

CUCUMBER HOUSE.

Seeds have been sown to produce plants in succession to those which have been in bearing for some time. They are sown in a little bottom heat, but this can only be obtained by keeping the pots at a considerable distance from the glass. As soon, therefore, as the seed leaves are formed the pots will be placed on a shelf near the glass, and in a few days afterwards each plant will be potted separately in a small pot. We like to pot the young plants well down into the pot, burying the stem quite to the seed leaves. When the soil is sufficiently moist at the time of sowing the seeds, it will not be necessary to water it until the plants are potted-off; indeed it is dangerous to the plants to water them at that stage, causing many of them to damp off. After potting them singly this will not likely occur. The temperature ought to be from 60° to 65°.

GREENHOUSE AND CONSERVATORY.

Great care is necessary now to prevent plants and flowers from being injured by damp. It will be necessary to warm the hot-water pipes to expel moisture, but the fires must only be lighted when the ventilators can be opened, and that is when the air is dry and light outside. The frequent thick foggy weather about London tells upon the plants, and it is much better at such a time to keep all the ventilators shut. At such a time the fires ought not to be lighted unless, which is sometimes the case, intense frost is accompanied by damp. When other work is not pressing is a good time to tie down and train into position the growths of Cinerarias, and stage and fancy Pelargoniums, if they are intended for specimen plants. If this operation is delayed the growths become stiff, and they are liable to snap off at the joints. It is best to lay the foundation early and then work upon it as opportunity offers, tying down the growths just a little at a time. There ought not to be any decaying or spotted leaves; if there are it is a sign that the plants are not in very healthy condition; indeed, if it is a case of spot it is certain that the functions of the plants are very much deranged. One cause of spot is deficient drainage, aggravated by too much water at the dullest period of the year, or cold hard water having been used instead of rain water rather warmer than the temperature of the house. Fancy Geraniums require a much lighter compost than the stage varieties, but all of them must be grown in well-drained pots, and with judicious ventilation and watering there is little danger of the plants suffering from damp or any other cause.

We have been inserting cuttings of the different varieties and types of Chrysanthemum. The sooner this work is done the better, both for growing large flowers and specimen plants. It is necessary to be very careful that the plants receive no check to their growth, else they will not unlikely start into premature flower. We have inserted at this time of the year cuttings of the Pom-pom section, and they have made splendid specimens. We have done so on another occasion, and every plant has started into flower by May. It is well to put in cuttings in February or March in case the early-rooted plants should run into flower.

FLOWER GARDEN.

Attention must be given to hedging plants. Calceolarias winter best in cold frames, either behind a north wall or the frame placed with its back to the south. Ours were put in about the end of October and have required no attention since, as the frame is on the north side of a wall, and the boxes in which the cuttings are do not require much water. We have commenced potting-off and boxing zonal Pelargoniums of the different sections, beginning with the variegated and bicolors. They do not require much water in winter, and it is tricolor to allow the soil to become quite dry before applying water; the plants should also be in a dry airy place. Under such circumstances a few degrees of frost will not injure them. Verbenas are much subject to the attacks of green fly, red spider, and thrips. Dipping them in the solution recommended a fortnight ago for *Azalea* will destroy all these insects. Fumigating with tobacco smoke occasionally is a very good practice for keeping the plants clean. The surface soil of the pots should be occasionally stirred with a pointed stick to prevent green mould from forming. Weeds and decaying leaves to be removed. Time can be afforded for such work at this season when the weather is rough or the ground frost-bound out of doors.

Auriculas in frames continue losing their foliage, and it must be removed as it decays to prevent spreading decay to the vital parts of the plants. Damp is very destructive to the plants, and it is important to see that the lights are watertight before the winter sets in. The soil just requires sufficient water at this time to prevent the leaves from flagging. The lights are removed every day in fine weather, but in account should the plants be exposed to cold winds or severe frost.

Carnations and Picotees must also be kept clean. The first trace of green fly should be the signal to fumigate the frames with tobacco smoke. Some growers complain of the prevalence of spot on the leaves. This is caused by damp. Mr. G. Rudd of Bradford, who, like many more ardent amateurs, grows his

plants under unfavourable circumstances, finds that he can keep them free from rot by placing the pots on boards and raising the frame a little off the ground, thus allowing the air to circulate freely amongst the plants night and day. He says they do not suffer at all (thing from frost if the soil is as it ought to be—moderately dry. Pinks are looking very healthy in the beds, but the ground is spongy with so much wet, and frosty weather would throw many plants out of the ground. Dahlias should now be examined, and all decaying portions of the tubers be removed.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*Descriptive List of New Dahlias.*

S. Dixon & Co., 34, Moorgate Street, London, and Amburst Nurseries, Acton.—*Select List of Vegetable and Flower Seeds, Potatoes, &c.*

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Descriptive Catalogue of Flower, Vegetable, and Agricultural Seeds.*

Editha Boot, Norwich.—*Illustrated Guide for Amateur Gardeners and General Seed Catalogue.*

William Rynsey, Joylands Nurseries, Waltham Cross, London.—*Catalogue of Select Garden and Farm Seeds, Potatoes, &c.*

Francis & Arthur Dixon & Sons, 105, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, &c.*

Little & Ballantyne, Knowlhill Nurseries, Carlisle.—*Catalogue of Stove and Greenhouse Plants, Roses, Rhododendrons, &c.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

Books (Retailer).—"Thompson's Gardeners' Assistant" contains in one volume all that you require. (H. Burbank).—Any bookseller can obtain the book for you and tell you the price.

PLANTS FOR GLASS CASE IN WINDOW (Noveboracian).—As such plants as *Primula sinensis* are killed by frost we advise you to grow some Dutch bulbs, such as *Hyacinths, Crocus, Tulips, Narcissus, &c.*, and fill the case with greenhouse plants during the summer and autumn months.

EVERGREENS FOR BULWARK EXPERIMENT (E.).—We would advise planting it with Spruce and Scotch Fir, with an undergrowth of common Laurels. Or if you felt inclined for more expensive trees there are many coniferous trees adapted for your purpose. *Ficus tigris* grows rapidly and forms a dense screen, but it is not sufficiently hardy in exposed places. Your soil is a good one for fruit trees, and if they have become covered with moss the probable cause is that the grounds are not well drained; this might also account for the bark cracking. The roots may have gone deep in the subsoil, and lifting them out of this might check the growth of the moss. Try draining if the soil is wet.

MILDEW ON VINES (E. S.).—We had a case similar to yours some years ago, when sulphur failed to keep the parasite in check. The roots had worked into an unsuitable subsoil, and when they were lifted out, and some rot had been placed round them the mildew disappeared. You may try this if you find the roots are not in good condition.

FORCING STRAWBERRIES (Captain Lyon).—If you have good plants of Keen's Seedling in the open ground from young runners last season, lift them at once and put in 6 or 8 in pots, and place the pots in a cold frame or cool house. They will require very little forcing to have fruit ripe by the time you name. We have gathered British Queen from the open ground about the middle of June. Young plants will produce most runners next season if they are potted now and grown-on in pots to be planted out in April. You might put the Keen's Seedling in a forcing house about the middle of April.

HYACINTHS FAILING (Idem).—We cannot account for the *Hyacinths* doing badly unless the bulbs were of inferior quality. As the pots are well filled with roots it could not be the soil that is at fault. The treatment has been right.

LIST OF EVERGREEN SHRUBS AND HYBRID RHODODENDRONS (J. C. H.).—*Rhododendron*: Azura, Albus, Alba, Arbus, Arbus, Eliza, Rose-galeum, Baron Oay, Barclayanna, Blandiana, Comense Salvi, Comenseum, Chianoides, Elfrida, Frederick Waterer, H. W. Sargent, John Waterer, Joseph Whitworth, Mionie, Schiller, The Queen, Zippoo Sabih, Twarditi and Yandoo. *Evergreen Shrubs*: *Juniperus chinensis*, English Yew, the common and Portugal Laurel, Sweet Bay, Aucuba japonica in variety, varieties of Box and Privet, Phillyrea, Mahonia, and Holly.

RUSSIAN TRANSPARENT APPLE (H. S.).—We hope shortly to be able to give the information you desire.

KEEPING ONIONS (Slapshill).—Your Onions were probably exposed to rain after they were harvested, which would much affect their keeping. The very best method of keeping Onions is to string them in bunches and hang them in an open lodge where they are dry yet fully exposed to air and frost.

RHODODENDRON LAYERS (J. C.).—Cut the branches immediately and plant on the first favourable opportunity. You may be glad to learn that any *Rhododendron* having a good ball of roots and soil may be transplanted in perfect safety at any period of the year.

NOTICE TO LEAVE (A Constant Reader).—If a gardener lives in his employer's cottage, has his wages paid weekly, and the cottage is considered part of the gardener's wages, his employer can turn him out after a week's notice.

SELECTION OF STRAWBERRIES (Amateur, Norwich).—We published very full selections in our numbers 608 and 610.

Newtown Pipers (J. E.).—Fruit medium-sized, roundish, broadest at the base, with broad obscure ribs extending to the apex, which give it a peculiarity in its outline. Skin at first dull green, but changing as it ripens to a fine olive green or greenish yellow, with a reddish brown tinge next the sun, and dotted a l over with small grey russet dots. Eye small and closed, set in a small and rather shallow basin. Stalk half an inch long, slender, and inserted all its length in a deep narrow furrow lined with delicate russet, which extends over a portion of the base. Flesh yellowish white tinged with green, firm, crisp, very juicy, with a rich and highly aromatic flavour. A dessert Apple which, when in perfection, is not to be surpassed. It is in use from December to April. This description is taken from an imported specimen it most not be expected that fruit grown in this country will attain the same perfection, for like most of the best American Apples it does not succeed in this climate. Even with the protection of a wall and in the most favourable situation it does not possess that peculiar rich aroma which characterises the one imported from America.

Mrs. POLLOCK GRANITE (P. Bourke).—The lady in whose honour it was named lived, perhaps lives, somewhere near Belfast. There is no later edition of the dictionary.

WATERING (Mr. Bodkin).—Water from a metal tank is not injurious to plants. No one could advise decidedly about diluting liquid manure not knowing what it is. The draining from a stable may have seven times its bulk of water added.

ANTI-MILDEW LIGNON (J. Mackenzie).—The ammonia is the most potent ingredient, but some of the saline constituents are destroyers of fungi.

COLLECTING SPECIMENS (C. F. W.).—The most courteous and most effectual way is to write for permission.

BULBS IN BEDS (Alpha).—Your bulbs by the addition of 4 to 6 inches of fresh soil will be 7 to 9 inches beneath the surface. They will be much later in flowering by the additional soil, but we do not think they will be materially injured, the bulbs being taken up after flowering. Any small plants of an evergreen character will run over and become lunched, and in a majority of instances be ruined. We should remove the soil as once, as it can do no good even to the bulbs, and will certainly injure herbaceous plants.

NAMES OF FRUITS (A Subscriber).—1, Black Hamburg; 2, judging from its shape, is Mill Hill Hamburg; 3 is much like Dutch Hamburg, but richer in flavour than we usually find it. How can anyone expect us to name Grapes from three miserable berries? A bunch and leaves of each variety should be sent.

NAMES OF PLANTS (H. Ventnor).—*Ruscus racemosus*. (H. S. R.).—We cannot name from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

1876.

THERE is always the fear when undertaking an annual task for the twentieth time that the sayings and opinions of previous years will repeat themselves, and that the whole will become "tedious as a thrice-told tale." But our task is a kindly one, and the kindlier feelings of our nature never grow old, in the ordinary sense of the word. They, like generous wine, mellow and become better as time steals on. This is especially the case when we have to review the past, and to address those who, we believe, share our feelings, and with common gratitude praise the Goodness that has spared us to exchange our kindly greetings once more.

A review of the past is of necessity full of anticipations of the future. All believe none of the trials and shortcomings of 1876 will repeat themselves in 1877. Experience should enable us to avoid the rocks on which we split, and should be a constant beacon warning us when we approach danger.

It appears to us that poultry has a twofold mission to fulfil. First, it has to help to produce food, next it is calculated to afford a harmless, beautiful, and pleasing recreation. We believe these purposes have not been fulfilled, the quantity of poultry has not increased, and shams have in too many instances been very losing speculations. We will endeavor to trace these facts to their origin, and to point out a remedy.

It is an established fact that the supply of choice poultry does not increase; that during the scarce time of year, April, May, and June, it seems to diminish. It cannot be from lack of encouragement in the way of price. Thousands of fowls were last year sold at 7s. 6d. and 8s. each. A man many years ago made a bet that six hens should in a year pay better than six ewes. He won easily. Two things are needed—first, to have the best breed, next to produce the chickens at the most profitable time. It was hardly necessary to seek the best breed; that was and is known. Practical tuition was required, and that has often been given in our pages. We might take a leaf out of the book of our first great agricultural writers. They sought to produce at once the most economical and the most profitable animals whether for food or milk. They persevered, and they succeeded not by seeking all sorts of strange breeds and animals, but by improving those they had. This was done so judiciously that the qualities

have become hereditary, and with a guaranteed pedigree certain qualities may be depended upon.

It is in this sense shows are useful. They make comparison easy, and they afford an open book in which anyone may read; they are always well attended, and consequently profitable. They attract the eye, they have in view for it is known to those who attend to do with them that some breeds cannot be kept lean, and are obliged to be reduced at certain periods of their lives.

Our poultry shows have differed, inasmuch as many have not during the year been successful. With a very few exceptions they have shown a falling-off, and have ended in a loss. Committees and exhibitors do not understand each other. The first bow to dictation in the matter of publishing judges' names before the show; the other fancy the show cannot go on without them, when in fact their birds are valueless and useless without shows. They forget unless they attract the public their birds might as well stay at home. This is true of the largest as well as the smallest shows, and independent exhibitors are in consequence canvassed and solicited to exhibit. The shows are too numerous by half, and the best class of exhibitors have ceased to show, hence the widespread discouragement. The declension has been gradual but incessant since new rules and practices sprung up. Admission while the judges sit at work, surrounded by people with open catalogues in their hands, the knowledge that any good cheap bird will be snapped up by those who attend for that purpose—these things do mischief that no number of selling classes will remedy. The straining after a large number of entries, and the accomplishment of the fact by showing only single birds, causing a weariness of sight and body at the monotonous class of fifty hens, each occupying a single pen, and all so much alike that an unpractised eye can see no difference in them.

Those who eschew the shadow of exhibiting, and seek the substance in the shape of table poultry, dream only of very large establishments of thousands of hens, rows of buildings and poultry farms. There is always an idea that the supervision necessary in a small place may be avoided in a larger. This is a mistake, success in poultry as in anything else is the result of labour and painstaking. We hear much of eking out a small income by its means, but we are sorry to say such "eking" means to put more work on a maid who has already more than she can do. Nine out of ten of the failures of those who have tried poultry only to be deceived, arise from the fact that pride is too powerful with the ladies who wish to adopt poultry as a means of income. They would exact from the buyer as much defence as from a seller. It cannot be. Just as Solomon said, "the borrower is servant to the lender," so the seller must give way to the buyer. There is not the semblance of anything but "kindliness" in this, but we must tell the truth. As usual she is at the bottom of the well, but we will guarantee when she is found she will say there is help to be had from poultry. There will always be a difference between buying and selling. But it is not so much as people fancy. A man who wants to buy will buy where he gets the best quality at the lowest price without asking the social standing of the seller.

There must be a limit to everything, and if Dorkings were had larger than they were some years ago they would rival Geese. They maintain their full weight, nor do we think they decrease in numbers. There were formerly but two classes for each breed, now there are six—adult and young cocks, hens and pullets, selling classes of cocks and hens. The same may be said of almost all the classes. Cochins are stationary, if not inferior. Brahmas increase in numbers but not in quality. In these two breeds the competition decreases for the reason that prizes are awarded to hideous vulture hooked birds. People know not what to breed or what to show. Spanish have remained stationary, but they esquin come to the fore. Game as usual hold their own, and always will; as a rule at all our large shows they are the best judged of any of our classes. The cross of the Malay is visible in many of the birds shown, but the judges avoid it. The Malay as on the increase in numbers, there are no wanting excellent specimens among them, but there are also many birds that are not pure-bred—for instance, many are shown with an ample dewlap. We do not know to what to attribute it, but among the Hamburgs, favourites with everyone, in both breeds the Golden are much better than the Silvers. Some of the Golden-pencilled have been almost everywhere perfect. The Silver-spangled are better than the Silver-pencilled.

The French breeds, if by that name we mean the Crève-Cœur and the Honan, show excellent birds, but they have yet to prove they bring us any quality we did not already possess. The La Pêche show poorly.

The Polish increase in numbers and maintain their quality; they are glad of it. They are old and worthy favourites. Bantams are always popular. Sbrights make another class year after year. The Game increase in numbers and are good in quality. We still mourn the Cochins. In these as in their larger brethren, the various class gives any meritorious breed the opportunity of distinguishing itself. These seem to be the anti-currents from

which birds pass either to be returned to their varied companionship or to form classes. An attempt was made by the Lehigh to claim a class, and their claim was admitted. They contrived to send three pens to compete for two prizes. We suppose they should be sent back again. Turkey's appear stationary, but they for some time took giant's strides, and cannot always do so. The pure American seems to be disappearing from our birds.

Geese are as heavy but not as numerous as ever. The Rouen Ducks have beaten Aylesburys in every way, weight and numbers. The Labrador or Buenos Ayres Duck deserves every mention of praise for symmetry, brilliancy of colour, and diminutive size. The class for fancy Ducks has been a great and a deserved success. Birds that a few years ago were kept out of sight and only looked at by stealth, now bear the scrutiny of hundreds without blinking, and care nothing for it. They are also shown in exquisite condition. Carolinas and Mandarins are become common. They make room for Casaraks, Whistling Ducks, Bar-headed Geese, Chilean Pintail, and many others.

Our task draws to a close. It has not been a satisfactory one, but we have laid our duty to speak plainly to our friends and readers. Committees will find it difficult to please the business and pleasure element at the same time. The latter will come when it please, the former must come; "Tis its vocation, H.L." There is no reason why they should be antagonistic. Every pursuit under the sun ebbs and flows, and as a rule it is at the ebb it is most inclined to learn.

We always defer speaking of ourselves till the end. It is the least pleasing of all our duties. There is no reason why it should be so. We can lay our hands upon our waistcoats and say we try to do right and to fill worthily the places our friends have given us. That which has been given us we will do our best to keep. We never have nor will we cause any deserving man to be anyone. We will be parties to no man's ruin, and we will be openly published on our page. We will, to the best of our ability, deal kindly and seek the merited esteem of all with whom we have to do. We have prospered during the past year, and with full hearts we wish, in this our first number of 1877, to subscribers, contributors, and all our friends—

A HAPPY NEW YEAR.

PREPARING FOWLS FOR EXHIBITION

When we exhibited fowls, which we did at one time quite largely, our birds intended for exhibition were taken in hand some two weeks previous, and kept in a room or pen well littered with straw or hay, under which was spread sufficient earth to soak up all moisture which might be dropped. The morning feed was always cooked meal and bran, and about a table-spoonful of linned oil-cake to each fowl. At noon it was cooked meat and chopped onions, cabbage or other vegetables. At night, raw meat and whole grain, either corn, wheat or barley. Gravel and lime rubbish was always within their reach, also fresh water with a little tincture of iron or tonic of some kind added. Twice a week we gave each bird a bit of assafœtida the size of a hazel nut; this increases the appetite, as well as acting as a corrective and preventive of disease.

Birds thus fed will acquire a hardness and lustre of plumage which is foreign to those picked up at random from among the flock.—(American Pet Stock Bulletin.)

BROUGHTY FERRY SHOW OF POULTRY, &c.

This was held in the Good Templar Hall, Broughty Ferry, on the 22nd and 23rd ult. The following is the list of awards:—

- POULTRY.—Dorkings—Cock—1 and Cup, G. S. Robb. 2, R. Craig. 3, Mrs. Armstrong. 4, J. Macdonald. Cuck—1 and Cup, G. S. Robb. 2, Mrs. Armstrong. 3, Mrs. Davidson. 4, Mrs. Davidson. 5, J. M. Beth. W. W. Webster. 6, J. M. Beth. 7, J. M. Beth. 8, J. M. Beth. 9, J. M. Beth. 10, J. M. Beth. 11, J. M. Beth. 12, J. M. Beth. 13, J. M. Beth. 14, J. M. Beth. 15, J. M. Beth. 16, J. M. Beth. 17, J. M. Beth. 18, J. M. Beth. 19, J. M. Beth. 20, J. M. Beth. 21, J. M. Beth. 22, J. M. Beth. 23, J. M. Beth. 24, J. M. Beth. 25, J. M. Beth. 26, J. M. Beth. 27, J. M. Beth. 28, J. M. Beth. 29, J. M. Beth. 30, J. M. Beth. 31, J. M. Beth. 32, J. M. Beth. 33, J. M. Beth. 34, J. M. Beth. 35, J. M. Beth. 36, J. M. Beth. 37, J. M. Beth. 38, J. M. Beth. 39, J. M. Beth. 40, J. M. Beth. 41, J. M. Beth. 42, J. M. Beth. 43, J. M. Beth. 44, J. M. Beth. 45, J. M. Beth. 46, J. M. Beth. 47, J. M. Beth. 48, J. M. Beth. 49, J. M. Beth. 50, J. M. Beth. 51, J. M. Beth. 52, J. M. Beth. 53, J. M. Beth. 54, J. M. Beth. 55, J. M. 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Lambton, jun. 2, T. & W. Kerr. 2, W. Brydons. OWLS.—Cock or Hen.—1, Cup and 2, R. W. Bryce. 2, A. A. Dudge. ANY OTHER VARIETY.—Cock or Hen.—1, G. Trevelyan. 2, W. Brydons. 3, T. L. Johnson. 4, R. W. Bryce. who, G. Ure, R. W. Bryce, W. H. Roberts. SELLING CLASS.—Cock or Hen.—1, G. Trevelyan. 2, J. Spence. 3, T. L. Johnson. 4, Fairlie & Midlane.

JUDGES.—Poultry: Mr. M. Leno. Pigeons: Mr. A. Frazer.

RIPON SHOW OF POULTRY, &c.

The second winter Show was held at Ripon on the 27th and 28th ult., when entries were far a-head of those of last year. Unfortunately the hall in which the Show was held was not large enough, and several rooms had to be brought into use, the lower one where the poultry were placed being very dark, and candles were requisite for the inspection of the birds.

Turkeys and aquatic fowls headed the list with some good classes, the special prizes going to a grand pair of Turkeys. *Dorkings* good, and *Brachmas* a fair lot and well placed; the *Cochins*, however, fairly leading this section with a grand pen of Buffs. *Spanish* not a large class, but the winners good. *Hamburghs* were heavy classes, the special prize being awarded to Gold-spangles. *Game* had three classes. In Reds a substantial pen of Brown Reds were placed first; the second being Black Reds, both old pens. Any other than Red were first Piles and second Duckwings, the first in splendid style, the last superb in colour; but we preferred pen 164 (Nelson), Duckwings, which might have been placed without fear of contradiction. Single cocks, first and special a Brown Red cockerel, grand in colour and with the most perfect breast, but as yet he does not know how to behave in a show pen, showing some timidity. *Game Bantams*, any other, were decidedly rusty; but some allowances may be made on account of the light; second (Nelson) by far the best. Single cocks, first a grand fellow, a true Black Red; the second, a Brown Red, we thought a little large, but stylish withal. Bantams, any other, were first Silver Sebrights, second and third Blacks. In *French* the winners were Crèves. In *Polish* the winners were Silvers; but the second had a very bad shaped crest, although the hen was a good one. The point cup for poultry was won by Mr. Belton.

Pigeons being single birds were a good entry, and some grand birds put in appearance; but, as will be seen, we did not think them well handled in judgment. Carriers a good class and well placed, the first and special being given to the first Black, which is a grand bird in all particulars; second, also very good. Pouters were good; first a Black cock in grand order, closely run by a Blue cock, the best blown bird in the class; pen 294 (Beckwith), a Red, was also a grand one. Barbis, any colour, was a decided mistake, first being a poor Black cock with small head and sickly eye; the second was rightly placed and a good bird, but perhaps a little more pinched than we have seen him shown. Pen 304, the best Black hen in the fancy, was passed without a commended, and should have been placed first without a second look. Tumblers, Short-faced Almonds, were quite as bad; first was a cock that has seen better days, and should not have marked here, being a deep mahogany ground colour, and quite black on breast, throat, and neck hackle; pens 312 and 313, which, if we mistake not, won the cup and second at Birmingham, and also winners at the Palace, but only second here, should have been an easy first and second; pen 312, highly commended, was by far the best. Both birds are a beautiful almond ground and thoroughly spangled, and very good in head, beak, and eye properties. Tumblers, Short, any other, were good and well placed; first an Agate, second Red, and third a Kite. In Tumblers, Long-faced, the best bird in the class was left out—viz., a Black Bald hen, first and medal at Newcastle, and first at Leeds, this being a most brilliant-coloured bird, very small, and a true Long-face; pen 334 (Thresh) first was a good Black Bald, but not equal to the above; second a Yellow Mottle, very pale in colour; third a Rosewing, a good bird.

In English Owls first was a bird of very waxy colour, straight and spiky in beak, with a little skull over the eye. The best, and which stood clear of all others, was the extra second-prize bird, a bird which the same Judge has often placed first in several competitions; pen 362 was a grand young bird and placed third. In foreign Owls we preferred pen 364 (Alderson) to all others as small and most correct in skull; the second was rightly placed; the first bird was both flat-skulled and large. These were all Whites, but a grand little Blue was shown by Mr. Baker. Turbits, 374 (Alderson) a Blue, was a head of all others, such quality of spike, mane, and gullet is rarely seen, and this we should have placed first; the first a good Bloo, was well worth a third position. Pen 381 (Seaton) ought to have been second; this is a Yellow, small and grand in every particular. Pen 382 also a Yellow, and quite to our taste. Nuns well placed, as also the Magpies. The rest of the classes were good, and the awards were generally well placed. The point prize was won by Mr. Baker.

Rabbits had but two classes, and several pens were empty. In *Lop* first was a Fawn-and-white doe; second Sooty Fawn, 22 by 2; third Black-and-white doe, 22 by 2. The latter is

quite worn out for the present, and needs a long rest. In the next class a Gray Dutch faulty only in size was first, second a Silver-Grey, and third a Silver-Cream.

Cage Birds were a good entry, and, as before stated, were judged by candle-light; but when the light became better we saw no cause to alter any decision. Belgians had but three entries, but these were good; the first also taking the special for the best bird in the Show, it being without exception the best we have seen for some years, the distintest head attached by a long neck to a superb pair of shoulders, which were carried in grand style, the body and tail long and straight, and in the finest possible order. Yellow Norwich good, the first a grand sound-coloured bird, second losing in little. In Buffs, also, the class was good. The Marked classes were two of the best we have seen for some time, a very slight muddiness on the flue or fluff only deciding between the winners and losers. The whole of the winners in both classes were four-pointed birds, the same remarks applying also to the York-hire-marked birds. In Crested Norwich were a few good birds, but the selling class, and these were really grand in both classes, ground spangling, esp. and size alike good, the first-prize Silvers running very hard for the special. In Mules first was a Clear Buff, and second a four-pointed Yellow. In the Variety class first was a Jonque Cinnamon, second Coppy, and very highly commended a Cinnamon. The Local was a good class; the first, a Belgian, was well equal to a second position in its own class; second a Scotch Fancy, and third a Coppy. English birds were a splendid class; first a Goldfinch, second a Finch, third a Linnet. In Parrots were some grand King Parrots; a good Grey was, however, placed second. The Selling class was a good one.

POULTRY.—TURKEYS.—1 and Special, F. Parker. 2, G. Mangles. Extra 2, Mrs. G. Jones. ANY OTHER VARIETY.—Cock or Hen.—1, H. Holt. 2, J. Newton. BROWN.—1, H. Holt. 2, G. Mangles. ANY OTHER VARIETY.—1, E. Wildes. 2, A. & W. H. Silvester. BRAHMAS.—1, Dr. Holmes. 2, G. A. BAKER. EXTRA 2, H. Beldan. 3, H. Beldan. 4, W. H. Beldan. 5, H. Beldan. 6, W. H. Beldan. 7, H. Beldan. 8, W. H. Beldan. 9, W. H. Beldan. 10, W. H. Beldan. 11, W. H. Beldan. 12, W. H. Beldan. 13, W. H. Beldan. 14, W. H. Beldan. 15, W. H. Beldan. 16, W. H. Beldan. 17, W. H. Beldan. 18, W. H. Beldan. 19, W. H. Beldan. 20, W. H. Beldan. 21, W. H. Beldan. 22, W. H. Beldan. 23, W. H. Beldan. 24, W. H. Beldan. 25, W. H. Beldan. 26, W. H. Beldan. 27, W. H. Beldan. 28, W. H. Beldan. 29, W. H. Beldan. 30, W. H. Beldan. 31, W. H. Beldan. 32, W. H. Beldan. 33, W. H. Beldan. 34, W. H. Beldan. 35, W. H. Beldan. 36, W. H. Beldan. 37, W. H. Beldan. 38, W. H. Beldan. 39, W. H. Beldan. 40, W. H. Beldan. 41, W. H. Beldan. 42, W. H. 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flourish as well some distance from a loft containing a large flock at liberty as near it—provided the soil is as good. I have also known a plant in a flower garden to be much injured by them, owing to its possessing such tender and succulent leaves, when all the many plants around were untouched. A head of lettuce occasionally given is recommended for birds that cannot get young beet tops in a neighbouring garden; and fanciers sow rape or other seed for them, that they may peck at the young plants as the latter stand in the earth. I should think it would be a good plan to plant the seeds of some tender vegetable in boxes, at such times that the plants may attain the height of several inches, at different periods through the winter. These may be placed in the loft in the succession in which they were planted, say at intervals of a week or two. This would be somewhat laborious. In the summer I find the common purslane or "pusey," answers excellently for a salad. It is abundant, and eaten with a relish by the Pigeons. I reserved a small corner of the garden for its growth, and now and then threw a bunch or two into the loft where my Pigeons were confined. The stems are about all they leave untouched. It is a troublesome weed; but cherish a few roots of "pusey" for your cooped-up Pigeons. Don't allow it to go to seed, unless it is scarce in your neighbourhood.

[Commenting upon the above extract from the *American Fanciers' Journal*, I would say that only in summer Pigeons need or seek any green food. In winter or in cold chilly weather it would do them harm. I have found that Tomblers chiefly care for green food. In the summer I have had them walk through rows of Potatoes, picking at the weeds and returning to the loft with their beaks quite green. Jacobsins, the variety I now keep, never seem to seek it. One condiment or helper of digestion all Pigeons want, and seek for greedily—viz., gravel. I have a large space of gravel, and they are frequently pecking it, especially new comers. I would say that salt, broken up old mortar, and gravel are requisites to health; but green food is an open question, and I am not sure it does the birds any good, but rather harm, as I have noticed it produces purging.—WILTSHIRE RECTOR.]

THE annual Show of Pigeons by the National Peristeric Society is to be on the 9th and 10th of January at the Crystal Palace.

TO PRESERVE EGGS.

I HAVE experimented with many nests of eggs this year, and find that butter or grease of any kind with me will certainly keep the eggs clear, but incubation will not begin. I have tried a solution composed of glycerine and olive oil with the same result. If you wish to keep eggs fresh for six months, take 4 ozs. of the best glycerine and 2 ozs. of the best olive oil, shake well up together and rub on the eggs. I had some eggs for breakfast that were put down last January in a cool cellar that were treated with a coat of this egg-preserved, and packed the large ends down in fine sand or salt, and you could not tell them from freshly-laid eggs. Out of twenty-four dozen that we have used this month that were put down in that way in January and February, five only were bad, and they only had a strong musty smell.—DR. W. C. MUNROE (in *American Fanciers' Journal*).

DO BEES MAKE HONEY?

In the *Rural New-Yorker*, Mr. A. Wilson of Onondaga, New York, asks this question, and then answers in the following words:—"I do not know why there should be any mystery about this question of bees making or gathering honey, to me it is as clear as sunshine. Suppose we take the best sugar, and make a gallon of molasses or syrup, and put it where the bees can get it, and they take it into their hives, and in time cap it over in the cell; but, in the meantime, let us keep a little syrup for comparison. After a while take an extractor and remove the syrup from the comb, and it will be found to be honey, and quite different from the reserved material; in fact, the one is honey and the other is not. The bees, of course, did not make the honey, but changed the flavour only. It will not be clover honey, linden, or buckwheat honey, but syrup honey. Their Creator has given the bees the power of changing the flavour of the sweets gathered, and it is then called by us honey. We may say that bees made it, and so we may say that cloth made of wool is woollen; and of flax, linen; of cotton, cotton-cloth; and so with honey. Bees cannot make buckwheat honey into clover honey, any more than we can make cotton-cloth out of wool."

In the above quotation Mr. Wilson's ideas appear to me to be pretty accurate and intelligible. His advice, to keep a little of the crude syrup to compare with that which is refined by the bees, is very good indeed. May I ask the readers of this Journal who have any doubts on the question to take his advice, and test the matter for themselves? The experiment will be found both

simple and satisfactory. In a summer day any unprejudiced person may settle the question to his own satisfaction in a few minutes by extracting both crude and perfect honey from a hive at the same time, and comparing them. It will be found that the honey which has been re-swallowed and stored-up has both body and flavour, in every sense different and superior to the crude honey as it is carried from flowers and disgorged in the centre combs of hives. Mr. Wilson says syrup made of sugar and water becomes syrup-honey. Though the bees thicken and sweeten the syrup, and greatly improve the flavour, I do not call it honey. It is, after all, only syrup refined and improved by bees, and is more the smell and appearance of all kinds of genuine honey. To sell syrup honey in any form as genuine flower honey would be a fraud and imposition. For many years past I have denounced this practice as dishonest, and raised my voice against it.

The American writer is quite right in his remarks about the distinct difference of this and that kind of honey gathered from this and that kind of plant. Last week a Welsh lady sent me a small bottle of honey which she obtained at Arundel in Sussex, on making a visit there last autumn. She did not like it, but wanted my opinion of it, and to know the kind of plant that yielded it. This Arundel honey pleased me much, as it was exceedingly clear and highly scented, and with a rich aromatic flavour. I never tasted better honey, and fancy it was gathered from wild thyme.

As the question of crude and perfect honey has been often before the readers of this Journal I need not dwell longer on it here. Young apiarists will find the subject a very interesting one, and if they could only be induced to put the question to the test of a simple experiment, they would find that bees not only gather honey, but refine and remodel it after it is gathered. In this remodelling process there is much water eliminated. This water escapes as vapour generally by the pores of hives, and during the nights much of it may be condensed and caught as it escapes.—A. PETTIGREW.

BEE PASTURE.

A CORRESPONDENT "P. B. P." has asked for a short description of places and flowers from which large harvests of honey have been obtained. It is no easy matter to convey in words what is and what is not a good district for bees. Though some districts are much better than others for honey-gathering, success is often attained in apparently unfavourable places. Fruit trees and pasture fields (for cattle) are properly considered the best provisions for bees in Great Britain. Orchards and dairy-farms are the principal features in the landscape from a bee-keeper's standpoint. All other things being equal, the south and warmer counties are better than the northern districts. The south is better than the north in more senses than one. Bees in the south begin breeding earlier, and as the climate is warmer the flowers yield greater supplies of honey; for climate favourable for honey-gathering in this country can never equal France, Italy, and America.

With a view to assist "P. B. P." and others in forming a pretty correct notion as to the best places and pasturage for bees, I will here name some of the most common and best kinds of plants for honey which grow in Great Britain. There are about one hundred kinds of plants grown in this country which yield food for bees; in this letter about twenty only will be mentioned.

In early spring the flowers of crocuses and some kinds of willows (*Salix*) are very tempting to bees; border hyacinths, single wallflowers, and an early tussock are haunted for their sweets. But the real honey season begins when the fruit trees come into blossom. The flowers of all our fruit trees yield large supplies of excellent honey. I may safely say super-excellent. Gooseberry, plum, currant, cherry, peach, apricot, pear, apple, raspberry, and black or bramble berry, are all honey-yielding plants, and are well known everywhere.

Field mustard (*Sinapis arvensis*) a mere yellow weed in corn fields, is a most valuable plant to bee-keepers in some districts, for it continues a long time in flower and yields great stores to bees. The honey from this plant soon candies, and the combs built from it are tinted yellow. The flowers of turnip, cabbage, and all the brassica tribe are of the same cruciferous shape, and yield honey in abundance. They are seldom allowed to flower in this country.

The field bean is another valuable plant for bees, and it continues a long time in flower, and is extensively cultivated. The flowers of this plant have to be tapped near their bottoms in order to obtain their honey. The flowers are so deep (like those of the red clover) that bees cannot reach the honey in their receptacles from the top, hence the flowers are pierced below, and much rich treasure is extracted from them.

Sycamore (or plane) trees are valuable to the bee-farmer, as they come into flower before the apple blossoms are over and continue till white clover comes in. In this country the honey lies on sycamore flowers and is clammy to the touch; from

sycamores bees gather honey very fast; it is of a greenish hue, very rich and highly flavoured. This green honey from sycamore and gooseberry trees is preferred by my palate before all other kinds of honey.

White clover, the queen of all honey plants, comes next in season. It lasts from the beginning of June till the end of July. In the year 1843 bees in Middlesex gained weight till the end of September, chiefly I believe from white clover. The honey obtained from this plant is clear and transparent to the eye, and imparts to the palate a rich, pleasing, smart smack which everybody likes. Some farmers in laying down grass land use more white clover seed than others, and wherever lime and bone dust are used as manure white clover is most abundant. It is incomparably the best plant for bees in Great Britain, and is found in every county.

Lime trees flower in July for a short time and yield honey freely. The American bee keepers, both in Canada and the States, have a great deal to say about basswood or the Linden tree as a honey-producer. I fancy it is a kind of lime tree, coming into flower late in the season and lasting a long time. Some bee-keepers speak of making plantations of basswood for bees alone. The climate of Great Britain is not so trustworthy as certain as that of America and some parts of southern Europe. If mignonette grows as well in those favourable climates as it does in our country I fancy it would be the best and most profitable plant to cultivate for bees. I have no hesitation in saying that an acre of mignonette would yield 20 lbs. of honey every fine day in this country—what would it not do in warmer countries?—it continues three months in flower, and grows almost in any kind of soil.

Heather, wild heather, the last in flower but not the last in importance and value of our honey plants, comes into flower in August and lasts about three weeks only. In this year (1876) my bees failed on the heathery hills of Derbyshire, but for ten years previously they stored up large supplies of it, and during some of those years they failed on the clover. It is hardly possible to convey a correct idea to the unstructed bee-keeper as to the great work done by bees on the moors in a short time. The moorland honey is high-coloured, and stronger in flavour than any other English honey. The Scotch people like it, but generally speaking it does not suit the English palate so well; but even in Glasgow fifty years ago flower honey was sold at a higher price than heather honey.

Having lived in several counties I may here give my opinions of them from an apianian standpoint. My native county (Lanark) is comparatively cold and bleak with a heavy clayey soil. On the Clyde, which runs through its centre, there are some large and fruitful orchards, which greatly help the bees in several parishes of the county. The fruit-tree blossoms are followed by field mustard, white clover, and heather. The bees there do well. Ayrshire is probably a richer county for bees than Lanark. I have not lived elsewhere in Scotland, but fancy that the rich loam of mid and east Lothian are rather too much devoted to the production of grain crops for bees to do well there.

Around London for many miles grass land prevails. Fruit and forest trees and white clover are what the bees work on there. Some five and thirty years ago I lived near Barnet, and found bees to do exceedingly well. I formed a favourable opinion of the whole district between London and St. Albans. I have not seen much of Kent, but from all I have heard of it I should say it is a good place for bees. Lancashire, in which I have spent twenty years of my time, taken as a whole is one of the worst counties in England for bees. On the bank of the Mersey between Manchester and Liverpool they do pretty well.

Cheshire, as a whole, is a good and eligible place for bee culture, presenting a fair pasture of varied kinds. Around some of the larger towns, such as Chester, Knutsford, and Altrincham, we find much fine pasture land and forest trees. On the large dairy and cheese-producing farms bees will not fail to do well. Sely being on the north corner of the county and butting against the river Mersey, and near Manchester, is chiefly used for market-garden purposes, and is therefore deficient in white clover. Cheshire is perhaps as good a county for bees as any other in the north of England. About Buxton in Derbyshire, which is so high and bleak that corn does not grow well, bees gather great stores of honey. The calcareous soil of the Buxton district yields plenty of white clover, and heather abounds within easy distance of the place.

In the East Riding of Yorkshire bees do very well—wedging their hives full of honey on every favourable season, and this without much care or attention.

In closing this letter let me refer to a question often put as to a district or pasture being overstocked with bees. "Is it possible to overstock a parish?" Yes, though I have never seen one overstocked. I believe it is often done in America by apianians who keep hundreds of hives. It is but reasonable to believe that the bees of fifty hives will do better than the bees of one hundred hives on a given pasture. But all bee-farmers may add farm to farm by spreading their hives over a wider area,

and this may be done without having to pay a heavy rental.—A. PETTICREW.

OUR LETTER BOX.

LIME FOR FOWLS (W. H. W.).—Quicklime and sand siftings from a brick-layer's yard would not be injurious to fowls. Give your moping cocker some bread soaked in lime.

DARK BRAHMA HEN (A Victim).—Your only remedy is to let her in the County Court.

JERSEY POULTRY SHOW (Exhibitor).—We received the prize list just as we were going to press.

FOWLS FOR WINTER LAYING (Mrs. W.).—Early-hatched pullets of almost any breed will, if properly fed, lay during the winter months, and as you possess both Dorchings and Brahmas you have no need to seek for other breeds for the purpose required.

PURCHASING BEES (Suzette).—The best time to purchase bees of breed in autumn or winter, for then they may be removed without risk of breaking combs or suffocating bees. In winter, too, bees do not go far from home, and may be easily removed from a garden at no great distance of, say a mile, without danger of the bees returning to it. We advise to begin with two stocks, and purchase them of a cottager in your own neighbourhood, for if a commencement be made with only one hive and something goes wrong with it much discouragement may be felt. The "Handy Book of Bees" is one of the best for beginners; in it you will find all the information you are seeking.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.	
	Baromet. at Sea Level.		Hygrometer.		Direction of Wind.		Shade Temperature.			Radiation Temperature.
1876 and 1877.	Barom. at Sea Level.	Wet.	Dry.	Wet.	Dry.	Max.	Min.	Max.	Min.	In. on Grass
Dec. Jan.										
Feb. 27	29.763	43	44	45	47	37	38	55.3	31.6	0.087
Th. 28	29.676	54.8	59.7	59.7	S.W.	42.3	35.6	44.6	56.6	4.4 0.165
Fri. 29	29.781	51.1	49.9	49.9	S.W.	44.6	34.8	49.1	55.8	4.6 0.252
Sat. 30	29.538	49.7	49.7	49.7	S.W.	45.1	35.4	49.4	55.8	4.0 0.318
Sun. 31	29.263	58.5	49.6	49.6	W.	45.5	35.4	49.4	73.9	4.0 0.178
Mo. 1	28.739	59.0	49.6	49.6	S.	45.8	34.0	49.3	70.0	3.8 0.162
Tu. 2	29.652	86.5	59.0	59.0	N.W.	45.3	49.2	48.6	65.3	36.0 0.47
Means.		49.7	47.6	47.6		45.0	34.4	38.0	61.8	4.0 9 1.255

REMARKS.

- 27th.—Raining all day, at times snow or sleet; wind high and very cold.
 - 28th.—Early morning and afternoon; windy but starts night.
 - 29th.—Wet in early morning, fair forenoon; rain in afternoon and evening; fair but windy at night.
 - 30th.—A beautiful day throughout; warm, dry, and bright.
 - 31st.—Windy and showery all day; at times very bright, but only for a short time.
 - 1st.—Very wet all the forenoon; at times after very bright, and at times very heavy rains.
 - 2nd.—A very pleasant fine day throughout; rain in evening and night.
- Another wet week, and a very warm one, the temperature being nearly 12° higher than the previous one.—G. J. SYMONS.

COVENT GARDEN MARKET.—JANUARY 3.

Our market has been so quiet since Christmas that we have no alteration to quote.

FRUIT.

	a. d.	s. d.		a. d.	s. d.
Apples.....	1	6 to 5	Nectarines.....	dozen	6 to 0 0 0
Apricots.....	dozen	0 0 0	Oranges.....	dozen	10 8 12 0
Chestnuts.....	bundle	0 0 0	Muscat & Crown pines	dozen	0 0 0
Currants.....	1 sieve	0 0 0	Pears, kitchen.....	dozen	1 0 0
Black.....	1 do.	0 0 0	dessert.....	dozen	3 0 12 0
Figs.....	dozen	0 0 0	Pine Apples.....	dozen	4 0 0
Filberts.....	lb.	0 0 0	Plums.....	1 sieve	0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	bundle	0 0 0
Gooseberries.....	dozen	0 0 0	Raspberries.....	lb.	0 0 0
Grapes.....	lb.	2 0 0	Strawberries.....	lb.	0 0 0
Lemons.....	per 100	6 10 0	Walnuts.....	bundle	6 0 0
Melons.....	each	1 0 0	ditto.....	per 100	1 9 2 0

VEGETABLES.

	a. d.	s. d.		a. d.	s. d.
Artichokes.....	dozen	0 10 0	Leeks.....	bundle	0 4 0 0
Asparagus.....	per 100	0 0 0	Mushrooms.....	pottle	1 6 2 0
Beans.....	dozen	0 0 0	Salsify.....	dozen	0 0 0
Beans, Kidney.....	per 10	1 0 1 6	Onions.....	bundle	0 0 0
Beet, Red.....	dozen	1 6 0	pickling.....	quart	0 4 0 0
Broccoli.....	dozen	0 0 0	Parsley.....	doz. bunches	2 0 0 0
Brussels Sprouts.....	1 sieve	8 0 4	Parsnips.....	dozen	0 0 0
Cabbages.....	dozen	1 0 2 0	Peas.....	quart	0 0 0
Carrots.....	bundle	0 4 0	Potatoes.....	bundle	2 6 0 0
Cauliflowers.....	per 10	1 6 0	Kidney.....	doz.	3 0 0 0
Capiflowers.....	dozen	8 0 0	Radishes.....	doz. bunches	1 0 1 6
Celery.....	bundle	1 6 2 0	Rhubarb.....	bundle	9 0 1 0
Coleworts.....	doz. bunches	0 0 0	Salsify.....	dozen	1 0 0
Cucumbers.....	each	1 0 2 0	Scallops.....	dozen	1 0 0 0
Endive.....	dozen	1 0 2 0	Seakale.....	bundle	1 6 0 0
Fennel.....	doz. bunch	0 1 6	Salsify.....	doz. bunches	1 6 0 0
Garlic.....	lb.	0 0 0	Spinach.....	bundle	3 8 0 0
Herbs.....	bundle	0 0 0	Tomatoes.....	1 sieve	0 0 0
Horseradish.....	doz. bunch	0 0 0	Turpins.....	doz. bunches	0 0 0
Lettuce.....	dozen	1 0 2 0	Vegetable Marrows.....	dozen	0 0 0

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 11—17, 1877.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.			
11	TH	Royal Society at 8.30 P.M.	41.5	30.1	35.8	8	5	4	11	6	18	0	52	25	8	21
12	F	Quekett (Microscopical) Club at 8 P.M.	43.1	30.5	35.8	8	4	4	10	7	17	1	41	19	9	44
13	S		43.0	29.3	35.3	8	3	4	14	8	1	2	43	50	9	7
14	SUN	2 SUNDAY AFTER EPIPHANY.	42.1	29.9	36.0	8	2	4	16	8	33	8	53	Q	9	29
15	M	London Institution at 5 P.M.	41.7	28.9	35.3	8	1	4	18	8	53	5	6	1	9	59
16	TU	Zoological Society at 8.30 P.M.	42.9	31.0	36.5	8	0	4	10	9	13	6	29	2	10	11
17	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	42.6	28.7	35.6	8	0	4	21	9	27	7	52	3	10	31

From observations taken near London during forty-three years, the average day temperature of the week is 41.1; and its night temperature 29.5.

HORTICULTURE IN 1876—A RETROSPECT.

HORTICULTURE (in which term I would comprehend all the various departments of gardening) has, like everything here, its varied scenes of prosperity and adversity, and on looking back over another year we have to chronicle gains and losses. In giving, then, my view of matters connected with it during 1876 I do so only from my own standpoint; by no means claiming for myself any right to do so, but at the same time believing that I have had some facilities for forming an opinion. It is known to the readers of "our Journal" that I have every year opportunities not only of seeing what is doing in the metropolis, but also in various parts of the country, and during that now closing have visited the west and north of England, and crossed the border into Scotland; and as I have recorded the results of these visits from time to time, I have no intention of doing more now than making a few general observations connected with them.

I think it is very clear that if amongst the arts of peace there is one at any rate that increasingly finds favour with all classes in our favoured land more than another it is gardening; and that if our neighbours on the Continent twit us with the low character of our schools of painting and sculpture, with our poverty in music and want of taste in architecture, we may fairly take our stand on our gardening powers and defy the world. And this love for our gardens has suffered no diminution in the past year. Whether one visits the stately grandeur of Chatsworth, Drumlanrig, or Trentham, the wind-swept garden of my friend Mr. Mackenzie at Newton Stewart, or the densely smoke-pestered garden of good Ben Simonite at Sheffield, it is ever the same. Where princely fortunes and grand facilities combine there is such a completeness that one wonders what can be the meaning of alterations and additions, or what there is to alter or add to; while to surmount obstacles and overcome difficulties is the task that loving hearts and hands desire to accomplish and bend their energies to effect, and I know not if real gardening power is not displayed in the latter rather than in the former case. Through all classes and in all ways this love holds good. Enterprising purveyors for novelties send their collectors all over the world to rife nature of its treasures, and give them to us for our gardens; while hard-working men at home strive to increase our pleasures by producing new varieties of flowers, fruits, and vegetables; and if at times they give us novelties which are only so in name, and improvements which are improvements at the wrong end—why, we must not set them down as dishonest; they have looked at these things with a parent's fondness, and have been unable to see the defects which strangers do, and we must pardon what we suffer in such cases for the good they have done us in others.

In looking back on the past year I do not call to mind at present anything very remarkable that will make this

year notable in novelties; while of such as have come under my own special observation I shall hope to say something when I send forward my annual "notes from my garden." While, however, admitting all this, I think it becomes a question whether flower shows are increasing in favour. The past year has been such a one with regard to metropolitan exhibitions as will probably never be seen again; they came so rapidly one after the other that exhibitors must have been at their wit's end. The Royal Botanic Society will no doubt hold its usual exhibitions; and as to the Royal Horticultural Society, I think we may conclude that its days of grand flower shows will be fewer, even should Mr. Wilson's plan for its resuscitation be successful. The opening of the Aquarium at Westminster, and the placing of the floral department under the care of Mr. J. Willis, gave an opportunity for the inauguration of a series of shows which for munificence in the amount of prizes we can never expect to see equalled. The attempt to break through the ordinary arrangement of flower shows was not very successful, but better or more extensive collections of plants and flowers have hardly been brought together before. But this is all a thing of the past. The Alexandra Palace, which has vied with its sister at Sydenham in the matter of flower shows, is shut up, after the testimony of all concerned that they did not pay. The Crystal Palace authorities say the same, and have in consequence cut-down their schedules of prizes. While in the provinces there seems to be an increasing tendency to try and attract people by other things; and horse shows, dog, cat, and poultry shows, fireworks, and amusements of various kinds have been added to the more legitimate charms of music. This is not a healthy sign, and either indicates want of taste or that there is so much sameness year after year that people tire of shows. There are, it is true, some notable examples to the contrary, but that this is the general state of things is, I fear, too true. There also seems to be an increasing unwillingness on the part of owners of large gardens to go in for exhibiting, and were it not for the exertions of professional horticulturists even our metropolitan shows would be meagre indeed.

I have been twitted for saying that I believe florists' flowers are at a discount in the south, and while I cheerfully acknowledge the attempts that are being made to revive an interest in them, I am compelled to abide by my view. I have been accused of disloyalty to the cause for having said so. To all who know the deep and hearty interest I have taken in florists' flowers all my life this will seem simply an absurdity. No! I am no more disloyal to them than the "Iron Duke" was disloyal to his country when he stated, some years before the Crimean war, that our field artillery was the worst in Europe; for it led to that thorough reorganisation of that important branch of our service which has made it what it is, and no cause is served by being blind to its defects. There is one flower the votaries of which seem every year to increase, and it is more especially a southern flower, and that is the queen of them all—"the Rose." Not an exhibition of it is held but numbers of amateurs crowd forward to

contest the palm. It alone of all flowers can support a distinct show for itself; and Maidstone, Hereford, Exeter, Chipping Norton, Helensburgh, Newton Stewart, Birmingham, &c., besides the Rose shows of the Crystal Palace, Alexandra Palace, and Aquarium, are undeniable proofs how popular, and increasingly popular, the Rose is; and the closing month of the year has witnessed the auspicious beginning of a National Rose Society, which it is hoped may foster and still further increase this widespread interest.

And while speaking of gains and losses we must not omit those personal losses which horticulture, like all other things, has to count up as the years roll by. All who know kind and genial John Pearson of Chilwell will feel that he has left a blank behind him not easily in his way filled up, and the growers of Pelargoniums and Grapes will long cherish his memory for the pleasure he has afforded them. Less conspicuous, but equally loved by a large circle of his acquaintances, William Cutbush of Barnet has passed away; his business having been taken up by his hearty and widely-respected brother, James Cutbush of Highgate. The florists, too, have to lament the loss of two well-known men in their day and generation—Richard Heady of Stapleford, a most successful grower and raiser, whose name will ever be regarded by all who love the Auricula, Tulip, Carnation, and Picotee. Heady's George Lightbody, Alderman Wisby, Petronella, Sarah Heady, King James, Chancellor, &c., all testify of his success. Practically he had been dead to the horticultural world for some years. Nathaniel Norman of Woolwich, too, is a name which Picotee and Pink growers cherish. He was the raiser of Mrs. Norman, Favourite, Lord Nelson, Mrs. Williams, and other Picotees; and of Charles Williams and other Pinks. Lastly, all have also lost, not through death but ill-health, as a grower and exhibitor, that most successful cultivator of the *Ranunculus* Mr. Carey Tyeo of Wallingford. On the side of gains we may record the re-appearance in the arena after an absence of sixteen years a most energetic and successful florist, Mr. E. S. Dodwell, well known in former years for his success as a grower of Carnations and Picotees.

Such is my retrospect. I confess the outlook does not seem to me very hopeful, but unexpected things may turn up, and at any rate all good gardeners know they cannot always have sunshine.—D., Deal.

POTATO CULTURE.

THE notes under this heading on pages 463 and 510, vol. xxxi., brief as they are, ought not to be let pass unnoticed, because the arguments of the writers are unsound and their deductions false and opposed to the teachings of experience.

The fallacy of the early-planting system has long been exploded, and the fact established that frost-bitten haulm is never so robust in its subsequent growth as that which has sustained no check. What happens when the haulm is cut-down to the ground by frost? Precisely the same thing as when we nip-off the leading shoot of any other plant—a number of lateral side shoots of moderate strength spring up in place of the one vigorous shoot, inducing a crop of numerous under-sized tubers instead of a lesser number of large tubers. Apart from the great risk from frost which such untimely planting entails, the condition of the soil would in most years be unfavourable; and even if it were tolerably dry the evil effects of trampling upon it in midwinter, especially if at all of a close heavy texture, would be perceptible throughout the season.

It is just at this time of year that seed Potatoes so often sustain irremediable injury; and as this is one of the primary causes of failure, it may be well once more to describe briefly the most important points of what may not inaptly be termed common-sense Potato-culture. These points are four in number, and may be stated as—1, The management of the seed; 2, The time to plant; 3, The time to take up the crop; and 4, Storage. Taking them in this order we have

1, The management of the seed. It was once thought that seed Potatoes must be made green by exposure to light before they were stored for the winter. How or whence the idea arose that the tubers could derive any benefit from this process I am at a loss to comprehend, for it is quite certain that it is unnecessary either for the promotion of ripening or the keeping of the tubers, and I fail to see how else it could be thought to affect them. Throw Potatoes in a heap, and whether they are green or any other colour they will sprout; lay them out thinly and they will sprout—nothing can prevent it; but

then in the heap the sprouts growing long and weakly must be broken off, hence arises wasted tissue and weakly growth. Laying thinly upon the seed shelves with the air and light playing among them, the sprouts growing slowly are proportionately stout, are not broken off, but cherished with jealous care, and by the time they are planted are just so many small plants crested with miniature leaves, bristling with rootlets, and with such a reservoir of nutritious juices in the plump tubers that they spring to the surface as if by magic, growing with vigour and precision as though each plant were cast in a common mould. It was a good many years ago that I learned this lesson, but I suppose the feeling of astonishment and of pleasure with which was experienced when its full importance was grasped will never be forgotten. At that time I was, like "A YOUNG AMATEUR," an advocate and practitioner of early planting, doing all that lay in my power to get the seed in the soil in January. I had done so, and am afraid that I congratulated myself upon being ahead of my neighbours when I went into a certain garden two months afterwards and found that not a Potato had yet been planted. Fortunately for me I had to repeat my visit a little later on, and there were the Potatoes not only planted, but with their shoots growing strongly well above the surface, without a failure or break of any kind, offering a striking contrast to the ragged appearance and weakly growth of my miamansed beds. Before I left that garden I learnt more about Potato culture in one half-hour than I had done in all my previous experience, and ever since then I have applied to practice the lesson so fortunately learnt.

2, The time to plant. This should in all cases be ruled by the weather and condition of the soil. Very calmly and confidently can we now await a favourable time, a glance at our seed shelves showing us that our seed tubers selected and laid on end in single layers at the time of lifting are slowly yet most surely making such progress that of the two we would prefer planting at the end rather than the beginning of March, not much caring if we have to wait till April, for we know that once in the soil growth will be so strong, rapid, and certain as to lead to early maturity and an abundant crop, which we will not subject to the slightest injury by exposing any part of the growth to the influence of late frosts.

3, The time to take up the crop. This is undoubtedly the most important point of all, for upon it success or failure depends in ninety-nine cases out of a hundred. You may have the best soil, carefully prepared seed thoroughly well planted and cultivated, and yet a fine crop will be spoilt and all your labour lost by a single blunder in the lifting. I have repeatedly called attention to the importance of this matter in the pages of the Journal, and yet, to my very great regret, I find no general improvement taking place. Lift your crop the moment growth ceases, and you will save every tuber. Is not that plain teaching? Who is there so obtuse as to be unable to comprehend this? Do you wish to avoid the blight and preserve the entire crop? Well, you can do so; at any rate, I am able to do so year after year, and I possess no special advantages (rather the reverse), and therefore I fail to understand why everyone else cannot do the same. All that is necessary is simply to watch the growth of the haulm closely, and so soon as you are convinced that it has stopped you have nothing to do but to dig up the tubers and convey them to the storage without the loss of a single day. "What!" you will say; "dig up the Potatoes while the haulm is green and the tubers unripe?" Yes, I answer; that is precisely what I want to persuade you to do. I know it is a stumbling-block difficult to get over, because it is so different to the old easy-going method of letting the haulm decay and the crop remain in the soil till late in autumn; but I hope to convince you that it is worthy of adoption for every reason, and to this end I cannot do better than explain its beneficial effects as realised in my own practice. In doing so I can write with confidence, for I am telling no new thing, describing no novelty, advocating no rash or untried theory. Six years ago I urged upon the public the importance of early lifting, and subsequent experience has proved that I was right. In the year which has just passed away the main crop ceased its legitimate growth somewhat sooner than usual, so that I was able to begin lifting on the 10th of August, and to finish on the 15th. It was glorious weather, but intensely hot. The soil was so warm and dry that the tubers were literally thrown into the sacks "all hot." The crop was a fine and most abundant one, without a trace of blight or a blemish of any kind; so that while our neighbours are all complaining of the ravages of the blight (many of them

have lost quite two-thirds of a really fine crop), we revel in abundance of sound tubers. Why? Not because peculiar advantages of climate, soil, or cultural skill are found here, but simply because timely lifting is practised.

Never was there a more favourable season for the lifting than that of last year, and yet it was lost. The fine hot dry weather departed, the usual rainy season set in, second growth followed in the haulm, the tubers became changed into seed and put forth an abortive crop of other tubers, blight followed, and then arose the oncray at the severe but not unmerited loss. Why will not good people help themselves a little, and avoid an evil when it is in their power to do so? All that is wanted is a little care, energy, and forethought. Only resolve to save the crop if it is possible, and little difficulties will easily be overcome; and this brings me to my last point—sometimes made a difficulty of.

4. The storage. A short time ago when explaining the beneficial results of early lifting to a gentleman having the management of several large estates in the south of Ireland, I was asked, "How about the storage?" Starting from the admitted fact that most of our people are without storehouses or sheds of any kind, how can the Potatoes be stored so as to avoid injury from the excessive sweating or heating to which they would be liable when lifted in an immature condition?" I replied, that the storage might be a difficulty, but it was not insuperable, far from it. Given a field of Potatoes, a tree or two, and a bog covered with Heather, and it seemed to me that I had everything ready to my hands. In a corner of the field I would make a pit, taking care to surround it with an open drain to carry off water; from the trees I would cut poles to make a roof to be thatched with Heather brought from the bog, and I should have an excellent storehouse quite dry and impervious to frost. I quote this particular case as it is an extreme one, my object being to show that there is no difficulty in this respect which might not be overcome by adapting our plans to existing circumstances. Of course everybody would like to have a storehouse replete with shelves and every convenience, but the want of such desiderata ought not to hinder the practice of early lifting, nor can I suppose a case in which the method of culture once more set forth might not be followed. If such a case is supposed to exist I invite discussion in the pages of the Journal for the general good. Tell us your difficulties and let us see if we cannot find a remedy.—**EDWARD LOCKHURST.**

CHRYSANTHEMUMS FOR NON-EXHIBITORS.

There have lately appeared in the Journal some excellent articles on growing Chrysanthemums, chiefly addressed to those who wish to grow them for exhibition. There is, however, another and larger section of the community who would like to grow Chrysanthemums, but hesitate to do so on account of the expense incurred to grow them as they are grown for exhibition, and it is to those I wish to address these remarks.

Growers for exhibition recommend the cuttings to be put in November. Whether this is absolutely necessary I am not in a position to decide, as I have had no experience in the matter; but this much I can say, that for growing for home decoration November is quite four months too early to strike the cuttings, and if very large plants are not required the last week in May is not too late. This will give time for the plants to fill 8 to 10-inch pots, and with twice stopping (which must be performed as soon as there is anything to stop) they will make very fair specimens, requiring no training beyond four or five small stakes and a little matting or twine; and the large-flowering section, if disbudded as soon as possible to a single flower on a stem, will produce from ten to twenty flowers, perfect in form and large as Dahlias. Plants of this stamp are much more useful for general decorative purposes than those which are much larger, and the expense of growing them is probably not a tenth.

Cuttings may be inserted under hand-lights any time between March and June, potted-off singly as soon as struck, placed under hand-lights or in a cold frame again for three or four days, and then gradually inured to the weather, by which time, say in about three weeks or a month from the time the cuttings are put in, they should be potted into their blooming pots and placed outside, where they may remain till the blooms are partially expanded. In the absence of a glass house or pit they would expand very fairly in a cottage window, but light and shelter from rain and wind are absolutely necessary at this stage if clean and perfect flowers are required.

This treatment also suits the eccentric-looking Japanese varieties, amongst which I think Fair Maid of Guernsey the most beautiful of all Chrysanthemums. Of course Florists would not agree to this, but there is no reason why they should have it all their own way.

Many of the Pompons in a mild autumn will flower very fairly outside, or placed where they can be merely sheltered from frost by boards or canvas, the wet not hurting them as it does the large-flowering kinds; but the Anemone-flowered section is much improved by glass.

Disbudding and watering should be attended to in the same way as is directed to be done when growing for exhibition, but the training is altogether different; the shoots are never turned back or twisted, but are allowed to grow in a more natural manner, and as the plants are grown so quickly and are never stunted, insects and mildew are generally unknown. Should it, however, be necessary to apply sulphur, it is best to mix it with water and apply it with a syringe.—**WM. TAYLOR.**

THE RUSSIAN TRANSPARENT APPLE.

HAVING received through the Editors of the *Journal of Horticulture* many inquiries relative to obtaining trees or grafts of the above valuable Apple, I regret that I am unaware that trees can be obtained from any nursery. I am cognizant that trees are purchasable under the names of White Transparent, Transparent Codlin, &c., and I know of many which have been bought under these names, but in no instance have they proved identical or of equal value with the real Russian variety. In order, as far as possible, to accommodate those requiring this Apple, I have communicated with a cottager in my native village with a view to purchasing grafts for distribution. Grafts, he informs me, are scarce, for even during the past season, when almost all other trees were barren, the Russian Transparents were so heavily laden with fruit that very little young wood has been made. He is willing, however, to send what grafts he has, and purchase others which both he and myself know to be genuine. I have offered to give sixpence each for grafts, and I am willing to distribute them at the same price, with the addition of two penny stamps per dozen grafts to pay postage. I will guarantee that the grafts are true to name, but beyond that I incur no responsibility, and cannot entertain any complaints as to their size, either as being too large or too small. As a matter of convenience the whole of the grafts will be sent to Mr. Wright, 41, Ashbury Road, Shaftesbury Park, London, S.W., who has kindly consented to distribute them (on receiving stamps) until the small supply is exhausted. As I have nothing to gain by this arrangement, my only object being to extend the cultivation of one of the most useful of Apples, the Editors will perhaps permit this announcement being made in their columns. The grafts will be posted in the same rotation in which applications are received, and stamps will be returned in full when grafts can be no longer supplied.—**J., Lincolnshire.**

ROSES ON POOR SOIL.

A CORRESPONDENT (page 8) asks for information concerning Roses which are to be grown in poor sandy soils and in a smoky atmosphere. He gives a list of the Roses which he has found answer in smoky neighbourhoods, but does not say anything of those he has tried on very sandy soil.

I do not think it is possible for anyone to have a worse soil for Rose cultivation than I have. Some years back I sent a sample to the Editors of the "Rose Journal," and they forwarded it to the Rev. C. P. Peach, who described it as the very worst he had ever seen. I also sent a hamperful of this miserable apology for soil to Mr. Rivers of Sawbridgeworth, who promised me to try what he could do with it. He potted some Roses in it, but his foreman when repotting forgot to leave those alone that were in my soil, so when I went to Sawbridgeworth I could learn nothing of the experiment.

My soil is mostly greensand and flinty gravel, which the people in Dorset call "riderspit." It certainly is the worst stuff I have ever seen. "Hercules" used to laugh at me when I spoke of my soil being bad. "What! A man show like you do, and then to pretend that he has a bad soil!—It is simply ridiculous." After a time, however, he came to see me and walked all round my place, his eyes here, there, and everywhere, never saying a word. Suddenly he halted and said, "Now I see that you have indeed a bad soil."

The question then arises, How with such a soil did I contrive

to show at all? Well, at first in the hottest time of my youth and when the Rose fever had its strongest hold on me, I removed the soil to the depth of 2 to 3 feet. Yes, and wheeled it away and brought the top spit of grass, not from meadows, for no one dare let me have that, but from the sides of roads. I mixed this with manure, and the Roses did splendidly. These were mostly on the Briar, plants purchased from the great nurserymen, and the year after I made the beds I showed in two classes (thirty-six and twenty-four) at the Crystal Palace (my *début* there), and I was placed first in each class. After a year or two, however, this soil became a little stale, and I found I could not afford to make Rose soil at the cost of about £1 for each square yard, so I was obliged to think of some expedient.

I had never given the *Manetti* a trial, and as many friends advised me that Roses would grow anywhere and in anything (Mr. W. F. Radclyffe asserting that they would grow even in brickdust), I bought a lot and tried them in a field of the very poorest soil in this poor county. Every plant died, and I was that year dependant upon the standards which were growing in the prepared soil for my show blooms. Still I was determined to try the soil again, but this time I selected an old pasture which forms a part of my glebe. It faces the south and has a low kitchen-garden wall at the back. I cultivated this and dressed it with pig manure, and I certainly expected to do something there. But last year I was very unfortunate. The plants grew uncommonly well and gave great promise of bloom, when one night in May a neighbour's sheep broke into it and ate all my young shoots, and put me back at least a month, and so made me too late again for the shows, and so I had once more to depend mostly on standards in prepared soil. This year I hope to have no such bad luck and to do something with these plants. I should strongly advise your correspondent to remove the soil if he only wants to grow a few Roses. If, however, he aspires to hundreds or thousands let him buy up all the road drift or pay some farmer to let him remove the grass at the sides of the lanes, mix this with manure, lay it on the sandy soil, trench deep, and plant. A certain amount of sand suits the *Manetti* very well.

During the summer I should certainly advise him to water both the roots and the foliage, for these hot sandy soils require a great deal of moisture. If he does this I think he will find that he can grow good Roses even in sand.—WILD SAVAGE.

I should like to supplement "SAND HILL'S" list of Roses by adding a few which have done well upon a sandy soil in the neighbourhood of one of our large manufacturing towns (Manchester). They are—Alfred Colomb, *Boule de Neige*, Charles Lefebvre, Dupuy Janain, La France, Marie Baumann, Madame Victor Verdier, Paul Neron, Princess Mary of Cambridge, and *Sémateur Veisse*. I could mention many others which will grow and bloom with more or less success. But in Teas, in addition to *Gloire de Dijon*, *Belle Lyonnaise* and *Homer* are the only two which do any good without protection.

While writing about Roses I should like to ask if there are two varieties of *Gloire de Dijon*? Messrs. Cranston & Mayos sent me some plants last season which are quite different from any I have ever seen, the young wood being of a deep red colour, very fine foliage, and the blooms are small but of a beautiful deep salmon colour. I have been told by a friend that there is a kind known as the red-wooded *Gloire*. What do the rosarians say?—J. B.

JAPANESE CHRYSANTHEMUMS.

I HAVE read with much pleasure the remarks of Mr. Moorman upon the Japanese Chrysanthemums, which I am pleased to see are gaining favour, and will come into general cultivation for their usefulness as decorative plants. My object in penning these few remarks is for the information of your able correspondent and other readers of this Journal, that the Japanese varieties can be grown into specimens in any trained form the cultivator may require for home or exhibition purposes. I will name a few that will make specimens which may be relied upon, as I have grown them, and which have been staged on the exhibition table and won the approval of Mr. Newton from the Inner Temple Gardens, London, who was a Judge at the Liverpool Chrysanthemum and Fruit Show. The first seven below have been grown into specimens, mushroom shape, 3 feet over—James Salter, Red Dragon, Comet, Elaine, Yeddo Lilac, Hero of Magdala, and Roseum Album. Fair Maid of

Guernsey, one of the best, will make a specimen. The following I have grown, but they are too stiff growers to make good-shaped plants—Dr. Masters, Wizard, Tassel Yellow, Regalia, Robert Fortune, Anarast, Prince Satsuma, Nagaaki, The Daimio, The Mikado, and Bronze Dragon.—W. BIGGS, *Sandfield Park*.

BRUSSELS SPROUTS.

A GARDENER to be successful must be prepared for all emergencies, and especially must have a full supply of the staple vegetables at their several periods of use. An unusually hot and dry summer has been followed by an unusual scarcity of Brussels Sprouts. The late planting of other greens, and the prolonged autumn, have resulted in a tolerably good supply of produce, but late-planted Brussels Sprouts have proved, as such planting always must prove, a failure.

For the production of "Sprouts" in great quantities and of the first quality a long season of growth is essential. In order to ensure this, and to have a supply of this esteemed vegetable as early as possible and irrespective of the season, I have for many years raised plants similarly to raising Cauliflower plants—that is, sowing the seed early in September and wintering the plants in frames, and sowing again in January in boxes, and transplanting the plants in a sheltered place to be ready for final planting in April or May. I have many times—indeed every year—found the advantage of that practice, but never more so than after hot and dry summers.

Autumn-sown Cauliflower plants are now fully to early. It has been impossible to prevent them from growing too freely, and there is a danger of many of them "buttoning." This emergency must be provided against by now sowing a pinch of seed under glass, and let me advise that a little seed of Brussels Sprouts be sown at the same time. It should be sown very thinly—I mean that the seeds should not be nearer than a quarter of an inch from each other; the plants will then come up sturdily, and will not damp-off as they do when sown thickly. The seed pans or boxes should be placed in a very light house or frame from whence frost is excluded. When the plants show their primary leaves they should be pricked out in other boxes. About March they will be stout plants ready for being planted at wider distances near a wall or other place where they can be sheltered with a spare frame-light, hand-lights, or mats. They will be of full planting size in May, and are certain to produce a valuable crop of Sprouts early in autumn. No more trouble is incurred in raising a hundred or more of these plants than in raising Stocks, Astras, or Lobelias, and the vegetables will be of far more value in due time than the flowers, more serviceable and more appreciated. In producing the best possible supply of Brussels Sprouts in the autumn and throughout the winter, the plants cannot be raised too early in the spring. I recommend, therefore, that a portion at least should be raised under glass in the manner described, and they will produce a crop which cannot fail to be extremely useful let the season be of whatever nature it may.—MARKET GARDENER.

TRAINING VINES—LATE-HANGING GRAPES.

The observations and suggestions by "A NORTHERN GARDENER" upon training Vines at page 549 of the Journal of the 28th of December, are most instructive. I never could conceive any common sense in growing Vines rods like broomsticks, denuded of branches and foliage, contrary to the natural habit of the Grape Vine itself. Of course there is a medium "twixt wild luxuriance and stunted growth," and that is a moderate extension by which fruit, leafage, and wood bear relative proportions, and thus preserve the health and symmetry of the parent stock, or Vine. Imagine the distortion of Vines, thickened in their upper length of rod, and spindle-shanked at the base of the bole, or with pot-bellies and drumstick legs. How can the circulation of the sap be equal and regular so as to feed branch, twig, leaf, and fruit alike of such Vines? The question is simply that of pruning and training, as "A NORTHERN GARDENER" evidently has perceived. I will relate my own experience.

A few years ago I erected a new viney some 25 feet long by 18 feet wide, the front lights of which I had constructed nearly 6 feet high from the border to the eaves of the roof lights, thus forming a glazed frontage on each side of the viney, along which wires were drawn from end to end horizontally, the wires of the roof lights being also drawn across the house, and not perpendicularly as is usual. My object was the

formation of a wired trellis on the front and roof lights upon which to train Vine branchlets, somewhat like a garden wall-fruit tree of pyramidal shape, broad at the bottom and gradually tapering upwards until at the top of the Vines spurs or twigs only grow. My Vines were planted and trained accordingly, and need it be said have grown as a tree ought to do, stout in the stems and branched as pyramids from bottom to top, each branch being allowed to carry three, two, and one bunch of fruit as its length and strength may indicate sufficient. The Vines are planted 5 feet apart, thus having 2 feet 6 inches branch space on each side of every Vine. The wood is clear nut-brown, and the eyes stand out like so many horse beans on the branchlets, which I shorten-back to about six, four, and three to two eyes, progressively upwards when pruned. Laterals are stopped as is usual, but not at less than two, three, or four leaves beyond the fruit, or if not a fruit lateral, four to five leaves from their base, just as fancy may incline for outline and necessary foliage. This system appears to answer my purpose, that of a medium extension. The fruit along the front lights, from the sun's rays being more oblique there than upon the roof lights, is not so highly finished as under the latter lights, yet is large and plump and full-flavoured. I am only an amateur growing half a score of Vines, and copying Dame Nature; but I have no doubt that this copy under "A NORTHERN GARDENER'S" hands would prove a success, perhaps initiate a new era in Vine culture.

Your correspondent S. M. L. Cakin, at page 557, may try Duchesse of Buccleuch, or Graham's Muscat Muscadine, or Chasselas Musqué de Sillery (Golden Frontignan), the last one Mr. Rivers's choice Vines, as a white or yellow Grape, and better graft or inarch, &c., than plant a young Vine: so, I think, Mr. W. Thomson, author of "The Grape Vine," recommends.

Very likely the Lady Downe's and White Frontignan Grapes have shrivelled for lack of moisture or nutriment in an inside border not mulched with horse manure, or fed with manure water sufficiently. Vine roots are the better for a run into an outside border for air and rain in proper season.—READER.

WELLINGTONIAS.

The inquiry of "What is the height and circumference of the outside branches of the largest Wellingtonia?" ought to evoke some interesting communications on the rapid growth of this remarkable mammoth tree, for its introduction to this country is of so recent a date that there cannot be any trees planted that are past the memory of the present generation.

When I was in the gardens of Poltimore Park during the years of 1861-5 there were growing in these princely grounds two Wellingtonias. The heights of these trees were not less than 30 feet—they might have been more, and were looked upon as remarkably fine and well-furnished specimens. One of them by some cause lost its leader, when the topmost shoot was tied upright to a stick, and when on a visit to Poltimore last autumn the leader was in no ways wanting; in fact the tree referred to was the better-grown specimen of the two, and I could not help admiring the symmetry and staleness of both; and I made a note in my pocket-book at the time—"60 feet or over." I had no means of ascertaining their exact heights. My impression was that they would possibly measure 70 feet in height, or even more. They are perfect specimens and well furnished to the ground; but it appeared to me that, owing to the excessive drought of the past summer, they had, in common with other trees, made less growth than usual, yet receiving no injury.

I have read somewhere that the raising of plants from part of the first introduction of the Wellingtonia seed was at the late Mr. Veitch's Exeter Nursery. This being so, and Lord Poltimore's grounds being in close proximity to these nurseries, and in which grounds all choice and rare Conifers found a good home, I think it more than probable the specimens alluded to were of the first batch of plants raised and planted in his lordship's gardens by the late Mr. Manning, who was for more than twenty years gardener there.

I have been told that the discovery of the first germination of seed in Mr. Veitch's Exeter Nursery was on a Christmas day, and that the first Wellingtonia planted out in this country was near the rockery in these nurseries under the direction of the grandfather of the present representatives of this firm. Whether this specimen is still to be found there I am unable to say. Perhaps some of your Exeter correspondents can supply this information. Although this might have been the

first tree planted out in this country, it is not therefore necessary it must be the largest or tallest, as different soils may make a difference in growth, a cool clayey bottom apparently suiting the Wellingtonia best.

I hope shortly to be able to give fuller information of these trees, as also several other fine specimen Conifers which adorn the noble grounds of Poltimore.—J. W. MOORMAN.

In answer to your correspondent we have here some fine specimens of the Wellingtonia gigantea. The finest is over 50 feet high and 90 in circumference, and 12 feet 4 inches in girth of the trunk.

I have enclosed a seed of the *Arancaris imbricata*, of which I have several seeds. Can you inform me if it is usual for the above tree to bear seed to perfection in this country? We have trees here which have coned for several years. One tree is showing at this present time a hundred blooms.—EDWARD COVENEY.

[Trees at Strathfieldsaye have coned freely for several years. Mr. Gordon in his "Pinetum" says that the seeds ripen at the end of March.—EDS.]

VENN'S BLACK MUSCAT AND DUKE OF BUCCLEUCH GRAPES.

"AN ASPIRING AMATEUR" (see page 553 of last volume) will do well to keep his aspirations in check in the matter of Venn's Black Muscat Grape; at least he should not aspire to plant it as a late Grape, for most assuredly it does not belong to that class. We have here three sturdy Vines of it, two of which have borne good fruit, the last having been sent to table early in December, but very badly shrivelled. Indeed the fruit began shrivelling before I thought it ripe; and this could not have been owing to bad treatment, as other kinds, such as Gros Colman, Burchard's Prince, Trebbiano, Mrs. Pince, and Gros Guillaume, growing in the same house and border, were in every way good, and kept quite plump and fresh to the last. Venn's Muscat is a free grower and fruiter, a rather shy setter, but of the most exquisite flavour; and from my first season's experience of it I should say that it is best adapted for planting in an early house, but amateurs of limited experience had better have nothing to do with it.

Duke of Buccleuch.—This was also fruited in the same house, and was ripe at least a week before Venn's Black Muscat, so that I am inclined to set the Duke down as the earliest Grape in commerce. The fruit was every way magnificent, some of the berries measuring over 4 inches in circumference; but it will not keep—at least it did not with me—more than three weeks after being fully ripe. So that this also must be classed as not adapted for an amateur, but it is the Grape for a market grower who is certain of a customer the moment the fruit is ripe. I may add, that though evidently it is a near relative of Golden Clampion, it possesses a better constitution and is not liable to be affected with spot; at least it was not so here, as Golden Clampion always was.—W. WILDSMITH, *Heckfield*.

In reply to "AN ASPIRING AMATEUR," I bought a Vine of "the Duke" when it first came out, and planted it in a viney in which there are eleven other Vines. The first season I did not expect a Grape. The Vine was pruned at the usual time, and I sent the top to a friend as something special, and he raised from it two strong canes. The following spring my Vine broke strongly, but not a Grape was produced. In the summer I called on my friend and inquired after the Duke, and there saw the two canes which had been forced with several others for first crop, but not a Grape was on either rod. We agreed to grow it on. The new wood was shortened to four eyes. It broke very strongly last spring, but did not show a single bunch. In July I again called on my friend to inquire of his success with the Duke, and his answer was, "Not a Grape, and I have turned it out." I allowed the two leading rods to grow, and in the autumn one was shortened to three eyes and the other was cut back to the last plump eye, leaving about 5 feet of well-ripened wood. I have again started the house, with what result I wait to learn. I find that the Duke requires slightly shading, as the sun scalds or burns its leaves.—Geo. W. GREENHILL, *Whist House, Ashford, Kent*.

"AN ASPIRING AMATEUR" asks for experience on the Duke of Buccleuch Vine. I have not had much personal experience with the Duke, but I have seen it as grown at Clovenfords.

From what I have seen there, and from what I grew of it last season, I would say Plant a Vine of the Duke, as I am confident it is one of the finest Grapes for invalids in cultivation. Its large berries, few seeds, and delicate flavour makes it suitable for that purpose. I may add that it kept plump with me three months after being ripe, which is another recommendation.—JAMES DICKSON.

SELECT VEGETABLES FOR SMALL GARDENS.

"A KITCHEN GARDENER" has rendered a service to many amateurs in publishing such a useful list of vegetables as that on page 3. It is a reliable list, for the vegetables named are sorts of proved worth. But little room is left for criticism with a view of making the list still more perfect, and what I have to say will be directed solely with that object in view.

In the list is one important omission, only two varieties of Broccoli are named—namely, Snow's Winter White and Walcheren, and the latter is more a Cauliflower than a Broccoli; in fact as a Broccoli it is of no service, but as a Cauliflower it is valuable. The list, therefore, contains only one real Broccoli, which is generally in use during December and January, sometimes lasting into February. Yet Broccoli must be had throughout March, April, and May. Three varieties which, if obtained true, will produce heads throughout that period are Adame's Early White, Wilcove Late White, and Cattell's Eclipse, which follow in the order named. Other varieties will also come into use during the same period. These I will not name, but will give advice that may be more serviceable. Every seedman or firm of reputation pay special attention to some few varieties of vegetables—pinning, as it were, their faith on the excellence of such varieties. Consult, therefore, the catalogue of your seedman, and select for the seasons required such Broccoli which are specially recommended for those seasons. Probably you will obtain varieties, under whatever name, which have been selected from the three I have named, or from others equally good, and you will be satisfied; but to order the veritable three you may not obtain the exact varieties which I mean. Does anyone whisper "dishonesty?" He need not do so. Dishonest seedsmen cannot long flourish now-a-days. The fact is Broccoli to preserve them pure require special care, and it amounts to an impossibility that anyone can give that care to every variety in cultivation: hence each grower selects a few which he can emphatically recommend, knowing that particular care has been exercised in the selection of the stocks and the growth of the seed. But to make doubly sure of a crop so important as Broccoli it is advisable to procure small packets of seed of six sorts rather than large packets of three sorts. There is such a confusion in the nomenclature of Broccoli that it is far more difficult to advise a selection than in dealing with Peas and Beans. Perhaps that is the reason why "A KITCHEN GARDENER" left late Broccoli out of his list.

I would say a word on Snow's Winter White Broccoli. It is one of the most important and valuable of early vegetables, and gives more satisfaction and causes more disappointment than almost any other—satisfaction when it produces heads, as it should do, in midwinter; disappointment when it does not "throw up" until spring. If there is one vegetable more than another to which the warning may be applied "Beware of cheap seed," it is to this Broccoli. If ever I see it offered at less than 2s. an ounce I regard the price as a "danger signal." The cheapest way is to give an additional price for a guaranteed packet. It is one of the vegetables worth buying true or not at all.

I will now turn to Cauliflowers. "A KITCHEN GARDENER" recommends Early London as being the earliest. It is not so. Early Erfurt, or selections from it sold as Dwarf Mammoth by the principal English seedmen, is in my experience the first and the best of early Cauliflowers. I have had seed direct from Erfurt, also seed of Dwarf Mammoth and Early London from English firms, and my verdict is as above given. By sowing Dwarf Mammoth and Walcheren in September and again as required in the spring, also one good sowing of Veitch's Autumn Giant in April, Cauliflowers may be had over as long a period as they are obtainable. Walcheren resists drought better than does Early London, and better than either does Autumn Giant.

The next omission to refer to is the "Winter Greens," or Kale. These are indispensable in every kitchen garden. I do not hesitate to say that the best and most useful of all is Cottager's Kale—the best in quality, the most productive, and

the most hardy. I have known all others killed by frost, also all Cabbages, Savoys, and Brussels Sprouts, while Cottager's Kale was uninjured. That was in 1860, when the thermometer was 6° below zero. I have ever since grown Cottager's Kale, and shall continue doing so as long as I am accountable for the vegetable supply of a garden. The Dwarf, or Tall Curled Scotch Kale, is also valuable, and Buda Kale is useful for its lateness. For sowing at the same time as the above for winter use Couve Tronchuda is a delicious vegetable. It is also as hardy as Savoys, the best of which are Tom Thumb or Early Ulm and Dwarf Green Curled. There is one other vegetable which should be named with every seed order however small—Rosette Colewort. Seed of this sown at the end of June or early in July will produce plants for planting closely together in vacant ground, and which will yield a supply of "Winter Greens" of the first quality.—AN OLD HAND.

EXHIBITING EXOTIC FERNS.

HAVING been sent for to this island (Isle of Man) for a six-weeks supervision by my doctor, a source of rejoicing to me is that my old favourite crocheted Ferns crops up; and as I have not been writing about them for a considerable time, let me hope that these notes may prove of utility to some young, or perhaps inexperienced, exhibitor, and if so the pains bestowed on their composition is at once more than repaid.

But first I would ask, How is it that this, to my thinking, exquisite tribe of plants is so sparingly exhibited by amateurs; and when staged, why are the specimens, with comparatively few exceptions, so very second-rate? My own idea is that societies do not encourage them enough in their schedules. I have heard people say, "Anybody can grow Ferns; they are as easy as A B C." My own experience leads me to a contrary conclusion altogether; and indeed if their cultivation is so simple, how comes it that I rarely find my favourites at any show displaying the perfection of high cultivation, discrimination in selection, and last though not least, in point of staging without a fault?

I do not propose now to touch upon the cultivation of Ferns, but to treat them purely as exhibition plants. I could say a word or two upon the queer way in which I see them judged here and there, but not now. Most good judges of stove and greenhouse plants think, no doubt, that they are quite competent to judge Ferns. I entirely disagree, however, with any such notion. To enable any man to judge Ferns without the reasonable danger of making mistakes he ought to be thoroughly conversant with the not unrequited intricacies in their cultivation, and also with their comparative rarity or otherwise in this country. Judging them, as is often the case, merely by their *tout ensemble* is entirely wrong. Every point (I mean condition, which is high cultivation, quality, equality, and so on) for and against each individual plant should be minutely considered and weighed, and then the sum total made up.

One rarely sees now in the schedules of any society more than one group provided for of six, eight, or nine plants at the outside (stove and greenhouse plants and Orchids we often find in tens, twelves, sixteens, and twenties). We need to have a class for twelve at the Provincial Royal, and a silver medal was awarded, together with the money, to the gainer of the first prize; but just now such things are numbered with the past, not, I hope, for ever.

In my opinion at every show claiming to hold a high position one group of twelve or more Ferns should always be provided for, with, of course, others of say six or eight; and I would preclude exhibitors from either entering for or competing in more than one class, as by that prudent course you give to others the chance of winning a first or second prize, and I know there are many would-be exhibitors who calculate beforehand that at this or that show "Mr. Smith and Mr. Jones are always first and second," so others can only at the best be third, or not even that, and so, quite discouraged, they leave the plants at home, not relishing what by them is considered a discreditable position in the prize list. Now, I would far rather be a good third at a fine show than a bad first at a second-rate one with nothing below me worth defeating; for where is the honour in the last-mentioned case? If, however, a further chance were provided in the shape of another group of six or eight, and if (as I contend should always be done) exhibitors were precluded from entering for or competing in both, probably several young, or it may be entirely fresh, aspirants for fame eagerly enter the lists, and the result is a lively, keen, and much-to-be-desired competition.

Again, much monopoly is a great evil. This I have long felt to be true; it dispirits and scares away many exhibitors, and perhaps if a handicap could satisfactorily be devised that improved results would be obtained.

I am not a great advocate for mixing Tree and other exotic Ferns together at shows, because I consider it is wiser to have the former exhibited by themselves; and when we see, as we often do, three or four monster specimens with long stems put up in groups of six, eight, or nine, it is not easy to find others of equal proportions to go along with them, and so sometimes a very incongruous and extremely uneven lot is staged—giants and dwarfs in close company! Take as one example a fine *Dicksonia antarctica*, with a 6-foot stem and a head perhaps 12 or 14 feet in diameter, and a *Todea superba* not more than 3 feet over and a few inches high only from the top of the pot.

Tree Ferns are noble and magnificent objects, very stately and imposing. That I readily admit, for I grow many of them; but from the comparative ease of cultivating them they would not weigh much with me were I judging, and I should certainly award the palm to a fine group of eight or nine evenly-matched specimens, distinct in species (not merely in variety), highly cultivated, fresh, bright, vigorous, and healthy, the perfection of good staging (a point sadly neglected by many now-a-days) in preference to another, though much larger, composed of enormous Tree Ferns and *Gleichenias*. Give us one good large group, at any rate, limited to one plant of each species, and the overwhelming advantage at present enjoyed by those who, like myself for instance, revel in a lot of fine *Gleichenias*, those invincible Nelson-like heroes to a judge's eye would be, most properly, done away with. I once asked an old judge how many *Gleichenias* I ought to put in a group of eight Ferns. "How many?" said he. "Why eight, of course, if you have them." Now I had them, fine plants, distinct species too. What a wonderful sight they would have been; they were every one pictures of health and beauty; but yet I dare not stage them, and if I had done so, greatly as they might have been stared at and admired, it is more than doubtful whether they would have been placed first, though perhaps worthy of even the Lindley medal.

Let me here name twelve exotic Ferns to the notice of some young exhibitor, which I consider a first-rate selection, and which, if staged thoroughly up to the mark and of goodly proportions, would be, in my bold to say, nearly invincible. Each is a distinct species, and the monster Tree Ferns are left out. *Gleichenia rupestris*, *Cibotium Schiedei* (not a Tree Fern), *Davallia Mooreana*, *Adiantum Farleyense*, *Todea superba*, *Brainea insignis*, *Platycterium grande*, *Lomaria zamickelohi* or *cyadefolia*, *Leucostegia immersa*, *Chelanthus elegans*, *Goniophlebium subarcticulatum*, and *Pteris serrulata major magnifica*—a truly goodly company, gems of the aristocracy. The last-named is a Fern hardly known, yet richly deserving the title "magnifica," so broadly and superbly it is crested. My own plant is some 4 to 5 feet high and as much in diameter, and is a beautiful object just now, as handsome and graceful as need be; it is bound to make its mark some day. Now put with these, for the purpose of completing, a fine group of, say fifteen, *Dicksonia antarctica*, *Cyathea medullaris*, *Dicksonia squarrosa*, *Cibotium regale*, and *Cyathea Burkei*, and I defy any man to find a more perfect lot.

I come now to watch you stage, say, eight of them. Let me here first warn you, whatever show you propose going to, invariably to take your best plants. Do not imagine that this or that lot are quite weighty enough for your adversaries, inasmuch as Mr. Jones or Mr. Smith are sure to "turn up" at the last moment with the "big Farleyense" so dreaded by you—the finest plant in the country—as you find to your dismay when it is too late. Always take your best with you. If you win easily—a mere walk over—the victory is the more decisive; if closely run, and you win notwithstanding, your quiet satisfaction is of course the more enjoyable.

Now then, begin your staging; it is quite time. Mr. Smith, whom you dread most, has already finished his lot. They are, of course, "nowhere;" but, by the way, you notice that he has put a young fresh *Gleichenia*, say 3 feet in diameter, just in his front row, making it his centre plant. He has another 6 feet through in his van. A sly dog that Smith! You know you left your best, 7 or 8 feet over, in splendid condition at home, as it would not be wanted. As soon as your back is turned, and precisely at the critical moment, before the judges come in, Smith, finding himself too closely run, quietly trots to his van, exchanges the dwarf for the giant *Gleichenia*, and you are much surprised when you return, in order to ascertain the

result of the judges' fiat, to find that you are "second" only, and your "friend," the artful dodger Smith, "first!"

But to return. Come along, and stage your eight. Now, do not be content with simply placing your plants down in double rows of four (as many do), with your best specimen in front, exactly in the centre, to catch, as you imagine, the eye of the judges, and so insure your being first. They will not look well that way, but, on the contrary, very prim. Take your largest plant, and put it in the centre of the back row on a large pot, so that it may stand rather higher than its right and left-hand neighbours, and leave a moderately wide space between the three. Now, put two more in a second row, between, so to speak, the plants behind, and to hide the empty spaces. Your front row can then be easily managed; very similar to the back one, only drawn in slightly the two outside plants. Now gently tilt the whole lot, so as to produce one solid graceful sea of lovely green waving fronds, thereby hiding, though of course as unostentatiously as you can, the pots or tube (these must be scrupulously clean), then take your labels, write them in a bold legible hand (the plainest and least expensive method is always the best), place them lightly in the elit of the sticks (these too must not be clumsy unpainted abominations so often seen, but thin and neat-looking), push each down firmly into the soil at the back (not in the front, or centre, or anywhere you can, which I often see done), adjust your private "number card" in front, and quietly wait your fate. It is not easy to estimate the great importance of each of these minor details, which you perhaps may think insignificant, but remember that the keen eye of an old experienced judge looks not merely at the plants, but also to see whether the group is, as a whole, slovenly staged or thoroughly up to the mark; and when your neighbour's plants, say your friend Smith's if you like, are evenly balanced with your own, and it is found perhaps not easy to decide between them for premium honours, then it is that the (by you) despised details of each lot are weighed deliberately by the judges one by one, such as the clean pot or tub, the masterly tying-out, the neat stake, the tidy and legible label, and also that somehow or other indescribably wonderful finishing touch to his pet, which the old hand learns by long experience to "put on" at the last moment, with such a fatal result to you; and whilst the first-prize blue card (taking with it too that long and much-coveted silver medal) hangs elegantly though modestly from Smith's "despised lot," you are obliged to be content with the, to your mind, humiliating colour on which you find the sickening words "second prize." Nay, further; you must also endure the unpleasant reflection that the plants which could have landed you easily at the goal are snugly at home, some 150 miles away, a fact, too, known perfectly by your adversary, who is watching you with grim satisfaction round the corner, and laughing in his sleeve at your unmistakable astonishment, consternation, and discomfiture.

—T. M. SHUTTLEWORTH, F.R.H.S.

N.B.—From first to last there is not a word in these notes containing a double consonant, except, of course, the names of the Ferns. I undertook to try and do this to please a valued friend of mine, who thinks that double consonants ought to be entirely done away with in writing the Anglo-Saxon language, and who rather doubted, I think, whether I could write so long an article as I contemplated without using some few words containing the obnoxious double consonants.—T. M. S.

PROPOSED SHOW OF CARNATIONS AND PICOTEES.—The undersigned desire to state that, in consequence of the uncertainty as to the action of the Royal Horticultural Society, they intend to promote a Show of Carnations and Picotees to be held in London during the season (July), and they will be glad of the co-operation of their brother florists in the work. A meeting to arrange preliminaries and commence a subscription for the needed prize fund will be held at the rooms of the Horticultural Club, 4, Adelphi Terrace, Strand, on Wednesday, January 31st, at one for two o'clock, when the attendance of all interested will be greatly esteemed.—CHARLES TURNER, *Royal Nursery, Slough*; JAMES DOUGLAS, *Loxford Hall Gardens*; E. S. DODWELL, *Larkhall Rise, Clapham, S.W.*

SOME SPECIES OF PRIMULA.—No. 2.

PRIMULA CORYMBOSIDA.—The normal species is a native of Siberia; it is well adapted for pot culture, and if a mass of it is grown in a shallow pan the numerous umbels of bright rose-coloured flowers have a very pretty effect. I have grown it out of doors in the neighbourhood of London very success-

fully; but to grow it well the plants ought to be renewed every three years from seed. I sow the seeds in April or May in a pot, placing in a gentle hotbed, and when the young plants are large enough to handle they are pricked out an inch apart in boxes containing good soil—loam three parts and leaf soil one part answers admirably. In August or September the plants will have become sufficiently large to plant out in their permanent beds. The object of planting at this time is that they may become established before the winter. The soil ought to be moderately rich, but should not contain any crude manure, which causes some of the plants to canker. I do not know how they would do in soil composed entirely of peat, but they do well in half peat and loam, or in a soil composed entirely of loam. They will flower well the following season, and also the next year, and probably a year more; but after that they decline in vigour and do not give satisfaction. It is a lovely plant for the rock garden; I had one in a sheltered position which grew and bloomed well annually for nearly a decade.

P. C. AMGENA and varieties of it are beautiful objects for the decoration of the greenhouse or conservatory in April. I have not tried any of them out of doors, but they are so very nearly allied to *P. cortusoides* that probably the same treatment out of doors would answer for them. When grown in pots they are very liable to be attacked by red spider, and if this gains upon the leaves they soon become sickly and ultimately perish prematurely, which seriously diminishes the vigour of the plants. They do best in a well-drained compost of turfy loam four parts, leaf soil one part, a little decayed stable manure, and sand is added, if necessary, to keep the compost open. From the time the crowns begin growing until the first flowers open early in April, the pots must be kept near the glass to prevent the leaves and flower trusses from being drawn up weakly. They also require plenty of air, but they are impatient of being exposed to scorching sunshine about the end of March or early in April, and a thin screen of light shading thrown over the glass for a few hours at midday is very beneficial. When the flowering period is over remove the plants to a shady position. They do not require much

water, but must not be "dried off." As the old leaves fade they should be removed, continuing to water just enough to keep the soil moist. About September all the leaves will have been removed, and the plants should be shaken out of the pots and repotted. —J. DOUGLAS.

LATE-HANGING GRAPES— VINE MANAGEMENT.

At page 557 Mr. Cakin asks for the advice of some of your Vins-growing correspondents in connection with his Lady Downe's and White Frontignan Grapes. Every competent Vins-grower knows that imperfectly ripened Grapes will not keep so well as others which are fully matured. Proof of this Mr. Cakin has in his own greenhouse, as he says that "not a few of the Hamburgs are still hanging in excellent condition."

My opinion is, that the Vines have been kept too dry during the time the Grapes were swelling, and in September when the fruit was colouring they have had too much atmospheric moisture with a too low temperature. Proof of this was the "tiny drops of moisture, like dewdrops on some of the berries in the morning," a sure indication of a too low temperature before the Grapes were thoroughly ripe. This sudden check no doubt was the cause of the shrivelling. To prevent a recurrence of the evil

explained of, my advice to Mr. Cakin is that as soon as the foliage is off the Vines to prune them immediately, rubbing the stems well with the hand to remove all loose bark from them, then with a hard brush give all the wood and glass a scrubbing-down with a strong solution of hot water and soft soap, giving the Vines a good scrubbing with the same solution, making sure that the water is as hot as he can bear his hand in it. Finish off with giving the wood, glass, and Vines a vigorous syringing with pure hot water, which takes off all the soapy matter and prevents dust from adhering to the Vines and other



FIG. 2.—*PRIMULA CORTUSOIDES*.

parts of the house. This done, give all the walls of the house a whitewashing with hot lime, then remove 2 or 3 inches of the surface soil of the borders, taking care not to injure the roots, and give a top-dressing of something like the following:—To six barrowloads of good turfy loam add one of half-

inch bones, one of wood or stick ashes, one of horse droppings, and half a bushel of soot. This compost may be laid all over the border to the depth of 3 or 4 inches, and forked slightly in, taking care not to injure the roots.

Next season be careful with firing and airing, never allow the roots to be too dry while the fruit is swelling. Guard against a stagnant atmosphere, as the Vine does not delight in an atmosphere overcharged with moisture, neither in one too dry. To this pay particular attention. Three or four times before the fruit shows signs of colouring give good soakings of liquid manure. When colouring commences keep-up the required heat and never allow the houses to be kept close, but allow a little air at top and bottom (according to the state of the weather), night and day. If these instructions are attended to I am certain that Lady Downe's will be grown in a satisfactory manner provided the border is good.

In regard to White Frontignan my opinion is, that it should not be rooted out, but inarched with Buckland's Sweet-water, which is a Grape that will give satisfaction. —A GRAPE-GROWER.

[The practice here detailed is from one who has won a foremost place amongst British Grape-growers.—EDS.]

EARLY WRITERS ON ENGLISH GARDENING.

No. 25.

RICHARD PAYNE KNIGHT.

HAVING written in a recent *Journal of Humphry Repton*, we may now record a few observations on the gentleman who advanced still further towards copying nature in garden designing.

After studying the writings of the several partisans we have been able to draw but one conclusion, which is, that the principles of Knight and Price are correct if impartially considered, and have been acted upon by the general consent of modern designers; nor can there be a greater proof of this position than that in his maturer practice Repton acted upon them himself. They differed in no one point of importance, that we have been able to discover, as to what constitutes beautiful points in a landscape: of course they agreed that such should be imitated; and we have read not one passage in any of their writings which will warrant the conclusion that, if assembled together, there would have been a dissentient voice to the observation of Price, that regular beauty and utility must not be neglected in the pursuit of the picturesque, for that would be opposed to the dictates of common sense.

Richard Payne Knight was the eldest son of the Reverend Thomas Knight, of Wormesley Grange, in the county of Hereford, and was born in 1750. He was a weak and sickly child, and his father did not send him to school, or suffer him to learn either Greek or Latin at home. Soon after his father's death, which took place in 1764, he was sent to a grammar school in the neighbourhood, where he made a very rapid progress in the Latin language. After leaving school he did not go to a university, but at the age of eighteen he commenced the study of Greek, which he pursued with great diligence, and which

became one of the chief occupations of his life. Shortly afterwards he visited Italy, principally on account of his health; and here he seems to have formed the taste for the fine arts, and especially for the productions of the Greek sculptors, which was his most prominent characteristic. Subsequently to his father's death he inherited the large estate of Downton, near Ludlow, from his grandfather, on which, after his return from Italy, he built a mansion, and he devoted much time to improving and ornamenting his grounds. In 1780 he was elected to serve in Parliament for the borough of Leominster, and in the following Parliament of 1781 for the borough of Ludlow, for which he continued to



FIG. 4.—RICHARD PAYNE KNIGHT.

in Cornwall, Bishop of Worcester. In 1794 he published the "Landscape," a didactic poem in three books, addressed to Uvedale Price, Esq. This poem contains many precepts, marked by sound judgment and good taste, on the subject to which it relates. It appears from the preface to Mr. Price's "Essay on the Picturesque" (published in 1794), that Mr. Knight proposed to Mr. Price that the papers written by the latter on rural improvement should be published with his poem of the "Landscape," in the same manner Sir J. Reynolds's notes were published with Mr. Mason's "Du Fresnoy;" but that the proposal came too late to enable Mr. Price to accept it.

Deprecating the formal style of laying-out the grounds around a mansion, Mr. Knight describes it as the style which

"bade the stream 'twixt banks close-shaved to glide;
Banished the thickets of high-bowering wood,
Which hung reflected o'er the glassy flood.
Dear peaceful scenes, that now prevail no more,
Your loss shall every weeping muse deplore!"

Fossil Plants.—The large number of fossil plants brought home from Greenland and Spitzbergen by the two Swedish ex-

peditions of 1870 and 1872 have been carefully examined by Dr. Oswald Heer, and they appear to show important light on the geological development of the plant world. An account of his study of the remains from the chalk period appears in a recent number of the "Naturforscher," and in the summary of his results Dr. Heer points out that the facts are against a gradual imperceptible transformation of plant types; from the upper chalk the dicotyledons appear suddenly in great variety without any transition, whereas other forms at this period wholly disappear from the scene. Further, these researches make it very probable that a whole series of genera have had their origin in the Arctic zone, and have thence "radiated" southwards. Lastly, Dr. Heer shows that the facts at present known of plant paleontology do not point to any alternation of climate or repeated ice-periods in these regions, a view which has also been developed by Professor Nordenskjöld.—(Nature.)

JUSTICIA FLAVICOMA.

THIS is a most useful plant for the decoration of the greenhouse or conservatory at this season of the year, its yellow flowers contrasting well with scarlet bracts of the *Poinsettia pulcherrima*. Plants of the *Justicia* from 1½ to 2 feet high dotted amongst plants of a dwarf habit have a very striking effect, and never fail to attract the attention of visitors.

The plants require a little rest after flowering, and in the spring I cut them down and encourage them with heat and moisture to break, when the old soil is shaken away and they are repotted. They are then encouraged to grow freely during the summer months, so as to make strong plants by autumn, and according as they are required I introduce them to stove heat; and when they come in bloom they are taken to the greenhouse or conservatory, and a very pleasing effect they produce, and continue a long time in beauty, which a great many of the other species of *Justicia* do not. It is very seldom one meets with the above old *Justicia*, but I think it inherits properties which might entitle it to more general cultivation.—J. A., Hill Grove.

STIRLING CASTLE APPLE.

For dwarf trees especially I cannot recommend a more suitable Apple than this. It appears to me to have all the good qualities of the Hawthornden—earliness, productiveness, high culinary quality, and compact growth, yet without the proneness to canker which renders the Hawthornden unsuitable to many soils. Were I planting dwarf trees largely with the view of deriving the earliest profit by the sale of their fruit, I should certainly have a good number of Stirling Castle. In a long row of trees in twenty-five varieties, the three which have proved the most valuable by their free and constant bearing, and the excellence of their produce for culinary purposes in the autumn, are Lord Suffield, Stirling Castle, and Cellini, coming into use in the order named. I am scarcely able to say which of these three I have found the most serviceable for home use. For travelling the Stirling Castle is the best, not bruising so much as the other sorts named. The soil of the garden is rather light, and Hawthornden cankers excessively. In this soil Stirling Castle requires no root-pruning and but little summer-pinching, but grows into a natural and fruitful bush which anyone can manage. Does "WILTSHIRE RECTOR" grow this excellent culinary Apple?—B. B., Berks.

STANDARD HELIOTROPES.

EVERYBODY agrees that sweet-scented flowers are desirable in the flower garden, but everybody does not agree to put them there, because as a rule sweet-scented flowers are not showy or do not last in good condition throughout the summer, and are consequently almost inadmissible to the formal garden. Were a highly-coloured *Heliotrope* which was at the same time sweet and free-flowering to present itself we should never again lack sweetness on the parterre, but for the present we must make the best of such as we have.

If the *Heliotrope* is not showy in colour it can be grown into a very pretty formal shape as a standard, and is then admissible to the most formal of gardens for the centres of circles or long rectangular beds. I used many of them in this way last summer alternately with standard scarlet *Geraniums*, and they were greatly admired both for their beauty and perfume.

Cutting struck now and grown-on in an intermediate temperature through the winter, each trained to a straight stake with

a wire hoop at the top, will make plants of almost any desirable size by June, when, if planted out carefully, they will flower abundantly till the frost put an end to their existence. This did not happen till the 1st of November in the past season: they were certainly as beautiful on the last day of October as they were any time during summer. They had half-globular heads about 2 feet through, and were encouraged to assume a partially drooping form. Any strong-growing variety will do for the purpose; but one I met with last autumn at Ashton Court, called Miss Lewington, will I think prove the best, it being a vigorous good-habited grower and of a brighter colour than any variety I have hitherto seen.

Standard *Geraniums* do not form very good heads in one year, but they lift well in autumn (which *Heliotropes* do not), and they improve as they grow older.—Wm. TAYLOR.

MARÉCHAL DE COUR PEAR.

MANY useful fruits have been mentioned in your columns during the planting season, and information of great value has been communicated. Acting on your advice, some years ago I planted at the gate end of my house the Pear above named, and I have had good reason to be satisfied with the result. I have not only won local prizes with fruit from this tree, but have been successful with it at one of the greatest shows of the Royal Horticultural Society. This Pear appears to me to possess a more than usual number of good properties. It is of noble appearance, of splendid quality, productive, and hardy. It ripens early in November, and is esteemed as the best Pear in its season. I have many applications from would-be purchasers, who pass by and admire the fine specimens which annually clothe the wall whereon the tree is trained. The aspect is nearly due east. To anyone having wall space for a tree and desiring superior Pears in November I say, Plant *Maréchal de Cour*. I have young Pear trees growing as pyramids, and amongst them the *Maréchal* is most promising. I have also seen it very fine in other gardens in this district.—M. A., Lincolnshire.

ASPECTS OF NATURE—DECEMBER.

"O, Winter! ruler of the inverted year,
Thy scatter'd hair with sleet-like ashes fill'd.
Thy breath congeal'd upon thy lips, thy cheeks
Fring'd with a beard made white with other snows
Than those of age, thy forehead wrapp'd in clouds,
A leafless branch thy sceptre, and thy throne
A shivering ear indubbed to no wheels,
But urged by atoms along thy slipper's way—
I love thee, all unlovely as thou seem'st,
And dradest as thou art."

DECEMBER, although the last, and generally looked upon as the most barren month of the year, has, flowerless and almost leafless though it be, an aspect of cheerfulness for those who seek Nature in her most favourite haunts. The forest trees are bare, and only the irrepressible Primrose and equally hardy Violet among spring flowers dare show their bright fresh foliage on sheltered banks, where they peep forth from among the dried and rustling grass, forming an almost spring-like contrast to the scarlet berries of the Cuckoo-pint or Wake Robin, which may still be found in many places, although they have but little time to remain with us; for even should bitter frost and heavy snow not hasten their disappearance, they will fall from the stem into the earth beneath to give us fresh plants for another season. But the Arums are not the only plants with berries of gaudy hue making spots of brightness in the landscape; the essentially winter plant the Holly, should at the beginning of the month—before violent hands have been laid upon the shrubs and they have been divested of half their glory, their berry-laden branches—be in the plenitude of its beauty; and this season, which has been exceptionally mild though wet, the dark sombre foliage of the Yew is still relieved by the rosy pink of its wax-like berries, many of which the birds have as yet spared.

Of plants made beautiful by their fruit at this season a charming garland might be formed. Those we have already mentioned, the Arum, the Holly, and the Yew, would be sufficient for brightness, while the Ivy, the Privet, the sacred Mistletoe, the evergreen Thorn and others would serve for contrast. But it is not alone in the berries or in the glossy varied foliage of our evergreen trees and shrubs that beauty may be found. The Mosses and Lichens attract attention at this season, not only because they are in the fulness of their beauty, but because at this time they are less hidden by larger

and more attractive plants. Small and inconspicuous to ordinary observers, the Lichens and Mosses gain their full meed of admiration from the student of Nature, who sees within their tiny cups and the manifold diversity of their miniature forms a marvellous instance of the limitless wonders of Nature. This is the season also of their fructification, when the exquisitely delicate greens and greys, so distinctive of these families, are in many instances relieved by thread-like rosette stems and blossoms, if we may so term them—so lilliputian as to appear like tinted hairs. The old orchard trees in Devonshire are so covered with grey Lichens that, save on the youngest wood, the bark of the tree is never seen; and this is the time, too, when in Worcestershire and other counties the *Mistletoe* in its peculiar hue of faded green, appearing like Lichens of a larger growth, is cut from the Apple trees on which it grows so abundantly.

When, as so frequently of late,

"The rain and wind best dark December,"

the wintry aspect of Nature is almost forgotten, the grass remains so fresh and green beneath repeated showers that a few hours' sunshine makes us almost believe it is spring, even while yet the winter solstice has not been passed. But the old adage says,

"When the day lengthens
Then the cold strengthens."

and so we may still believe that Winter in his old-fashioned garb of frost and snow will yet come to us. But whatever the weather—boisterous wind and driving rain, hard frost and deep snow—December brings us to the end of the year, and with the opening days of January we feel a change, too subtle to be seen, in all around. It is, as it were, the mysterious voice of Nature which speaks to our inner consciousness of reviving life. Day by day a few more minutes of light, and day by day we breathe an atmosphere which inspires hope, for the darkest days are past and the months to come are full of promise.

"These as they change, Almighty Father, these
Are but the varied God. The rolling year
Is full of Thee.
In winter awful Thou! with clouds and storms
Around Thee thrown, tempest o'er tempest roll'd,
Majestic darkness! in the whirlwind's wing
Riding sublime, Thou bidst the world arise,
And humblest nature with Thy northern blast,
Mysterious round! what skill, what force divine,
Deep felt, in these appear! A simple train,
Yet so delightful, mix'd with each kind art,
Such beauty and beneficence combin'd!
Shade, unperceived, so soft'ning into shade;
And all so forming an harmonious whole,
That, as they still succeed, they ravish still."

—T. S. J.

MRS. PINCE'S BLACK MUSCAT GRAPE.

My experience of this Grape coincides with Mr. Anderson's given on page 516. My Vines of it are all grafted, chiefly on Black Hamburgs. It is a Grape evidently requiring a long season to ripen thoroughly, and hence should be started earlier than Lady Downe's or Black Alicante. I have never seen it really well coloured, there being always more or less of redness at the stalk end of the berry. In appearance it cannot compare with Alicante, but is quite equal to it, if not superior in keeping qualities, while in point of flavour it is far before it; in fact, so far as my experience goes it is the finest flavoured of all late-keeping Grapes. I have had it in good condition until April. I find it sets freely in a low temperature, if care be taken to shake the bunches or draw the hand carefully over them once a day when in bloom. I have tried it in several varieties, but always obtain by far the best coloured and finest fruit off a Vine growing within 3 or 4 feet from a hot-water boiler, where in growth the roots always have a very considerable amount of bottom heat. In this position the Vine of course requires abundance of water.

With regard to late-keeping Grapes generally, I give the first place to Lady Downe's, and putting aside the question of bloom and colour, the second place to Mrs. Pince, Black Alicante standing third on my list. If appearance alone must decide the merits of the last two, Mrs. Pince must necessarily occupy the third place.—J. E.

PREPARING POTATOES FOR PLANTING.

I CANNOT quite agree with "A NORTHERN GARDENER" (see page 528) in his mode of preparing the Potato before planting. He advises that the sets should be carefully looked over and

set upon their ends in a light place, so that the tubers may be able to strengthen their growths before they are planted. Now my opinion about this is that if those Potatoes, such as early kinds, were at this period of the year carefully planted on a warm border at the depth of 6 inches, that the tubers would grow quite as strongly on the ground if not stronger than it placed in the light.

I think we should have better crops if we planted earlier in the season than is usual. They should all be in by the latter end of February, and I advise that we grow more of the kidney and what we called the second early kinds, and not so many of the late sorts; for I am of opinion that if more of these kinds were grown we should not be troubled nearly so much with the disease as we have been of late, for we should be able to have the Potatoes out of the ground, dried, and stored away before the autumn rains set in. During the past season all the early sorts of Potatoes, not only when dug turned out a fair crop, but not a bad one was seen amongst them, but the later kinds when taken out of the ground were quite half of the other bad. That is why I advocate growing more of the earlier kinds.—A YOUNG AMATEUR.

EARLY-FLOWERING AZALEA INDICAS.

PLANTS flowering in advance of the generality of their kind are very valuable, inasmuch as they are more readily forced, and by their earliness contribute to producing a long season of bloom. Irrespective of forcing, Azaleas may commence flowering in February and be continued to June by a selection of early, midseason, and late varieties, ordinary greenhouse treatment being given the plants.

The early-flowering varieties are the most desirable for forcing; they are more readily excited into growth, taking less time and a lower temperature to have them in bloom by a given time than the midseason kinds. The new year usually brings along with its festivities a great demand for flowers. None are more desirable than Azaleas both as plants for decoration or as affording flowers for cutting. Small standard plants a foot to 15 inches high, with heads as round as a ball, covered with flowers, are admirably adapted for table decoration. Pyramids are certainly very gorgeous when in flower, and exhibit great skill in training; but why not have variety in form? Why not more plants be allowed to assume their natural bush-like habit? A half-ball is no despicable form of Azalea.

Double flowers as a rule are not only more beautiful but more lasting than singles: hence their greater value for cutting. In Azaleas we lose in doubles the beautiful marking of the singles, the doubles being mostly selfs or their marking and shading are indistinct. Nevertheless the doubles have a fullness and an endurance fully compensating for any loss of marking.

Amongst the best of the early-flowering Azaleas are *Narcissiflora, double white, very profuse-flowering, and certain; *Boreig, double white, very fine and equally free; Bernhard Andreas is another fine double white; *François Devos, double deep crimson, is of capital habit and very free; Roi des Doubles, double rosy carmine, very free; Roi des Belges, double bright red; and *Amélie, violet purple, small, semi-double, well known, excellent for forcing. In singles we have *Alba, pure white; *Fielder's White, Magnol, rosy salmon; Madame Van Houtte, white, flaked rose and crimson; Roi d'Hollande, deep red; and *Vittata elegans, white, red edges.

Those distinguished by an asterisk are fine for forcing, and ought to be grown in quantity by those having flowers largely in demand. They can be had in flower at the duller season with slight forcing.—G. ARREY.

TABLE DECORATION.

THE following arrangement came under my notice at a dinner table the other day, and I write, as I consider it worth copying. The foundation of a centre bouquet at table was a plant of ordinary Maidenhair (*Adiantum*) in an 8-inch pot. The pot was screened by one of the expansible wooden screens, and among the fronds of the plant were inserted, at the height proper to be effective, flowers tied to sticks or wires concealed by the Fern, notably Allamanda Schottii, Lapageria rosea, Poinsettia pulcherrima, a solitary Rose, *Primula sinensis*, various Geraniums, and other flowers not so noticeable. The effect was charming, the more so as the fronds of the Fern were naturally disposed more gracefully than they could have been done had

they been culled and inserted among the flowers, and the plant itself was uninjured.—A SUBSCRIBER.

BEGONIA NITIDA ODORATA.

In reply to Mr. Seers I may say that I have this Begonia planted out in a narrow border against the back wall of a stove, the shoots being trained to a wire trellis, and are bearing panicles of flowers, than which few others at this season are more attractive. The plant in question was a year old when planted out in May last. It is now several feet high, and will go on growing and flowering continuously until it overgrows its space and becomes bare and leggy, when it must give place to a young plant. I grow all my Begonias for winter-flowering from cuttings struck in April, growing them on during the summer, and they bloom all the winter. They are not kept a second year, as young plants give finer flowers and fresher foliage. *B. insignis* is very free. It is now flowering, as also are the following species and varieties:—*B. Ingrami*, *Sanderiana*, *erecta multiflora*, *parviflora*, *Weltoniensis*, *fuchsoides* and *hybrida floribunda*. *B. manicata* is throwing up its great feathery forked panicles, which are very elegant whilst they last for vase decoration.—G. A.

MYOSOTIS DISSITIFLORA.

Not many gardeners, it is to be hoped, are without a stock of this charming Forget-me-not. Its worth is now well proved and its value admitted. The plants for early flowering should now be robust and about 6 inches in diameter. These planted closely in lines or beds will in the earliest days of spring produce an effect that will not be surpassed during the whole season of the year. But I allude to this plant now for the purpose of noticing its great value when grown in pots for indoor decoration. Plants for this purpose should be taken up and potted without delay. Already the flowers may be perceived in some of the shoots, and which may be injured by a possible visitation of frost and snow. These plants, if potted in rich soil and placed in a cold frame or on the shelf of a greenhouse, and kept well supplied with water, will produce dense masses of lovely colour in February and March, contrasting admirably with all kinds of Dutch bulbs, and rendering the conservatory specially attractive and enjoyable. I know of no plants which with equal ease and so much certainty produce such a chaste, distinct, and agreeable effect in the earliest months of spring as this charming Forget-me-not. It should be grown in quantity in all gardens where spring flowers are cherished, and especially should it be employed for indoor decoration.—A CONSERVATORY FOREMAN.

NOTES AND GLEANINGS.

We have had accounts sent to us from many places of the injury caused to garden crops by the excessive wet. Not the least of the inconveniences of the season has been the flooding of stakes and the extinguishing of fires, rendering other adjuncts necessary for the provision of heat. The most prompt and handy of these adjuncts are PORTABLE STOVES, which are made in metal and terra cotta after the principle adopted by the late Dr. Arnott. We have found by experience that these stoves introduced into forcing houses and tropical ferneries are of substantial value in keeping up the heat, and at the same time without injuring the most tender vegetation, provided—and this is of the greatest importance—that the elements of combustion are carried away by a pipe into the open air. A shallow dish of water placed on one of these stoves secures atmospheric moisture proportionate to the heat of the stove. One or two stoves of this nature should be had in reserve in gardens where the regular means of heating is liable to interruption by excessive rain or other causes.

The gentlemen recommended by the Council of the ROYAL HORTICULTURAL SOCIETY to fill the vacancies for the ensuing year caused by the retirement of Mr. Robert Warner, Hon. and Rev. J. T. Boscaaw, and Sir Trevor Lawrence, are Sir Charles Strickland, Bart., Mr. H. J. Elwes, and Mr. T. M. Shuttleworth.

—AN INSTANCE OF PEAR TREES RIPENING TWO CROPS OF FRUIT IN ONE SEASON has been communicated to us. The trees are standards in the garden of S. Lutwyche, Esq., Bramertons, Lower Tulse Hill; the variety Williams' Bon Cretien. From these trees the gardener, Mr. Gates, gathered the first crop at

the beginning of September of last year (1876), and in November he gathered a second crop from the same trees. The latter were quite ripe, and equal in quality but not in size to those of the first or principal crop. It is not uncommon for Pear trees to blossom twice a year, but it is a very unusual circumstance for them to perfect two crops of ripe fruit. The circumstance is no doubt attributable to the extreme heat and drought of summer ripening the wood prematurely, followed by the moist, mild, and prolonged autumn, which has proved in the case of these trees a second spring and summer. It will be interesting to note the condition of these trees during the next spring and summer, after having so clearly "lost their reckoning" in the past year.

—SPRING FLOWERS are welcome to all, and especially such which have long been familiar—the cottagers' flowers—Crocuses, Snowdrops, &c. These flowers are now showing their "grass" above the surface of the ground, and these established clumps if potted will force with the greatest certainty, and unfold their flowers in windows and green-houses some weeks before they would expand in the open air. It is not everyone who can purchase a supply of these bulbs "fresh from Holland" every year for forcing, but all who have them in their gardens may dig-up the clumps and place them in pots in light soil. All that is afterwards necessary is abundant supplies of water and the lightest position at command, and masses of purity and beauty will shortly be produced. Many humble dwellings may be made cheerful and many window-sills bright by these home-grown and home-forded bulbs. They are flowers, too, for the town as well as flowers for the country, and are so easy of culture that even a child may manage them. For miniature suburban green-houses these home-grown bulbs are very suitable.

—AS AN INSTANCE OF THE MILDNESS OF THE SEASON a Nottinghamshire correspondent informs us that he has the old Monthly China Rose flowering freely in his garden, and that he has lately gathered lovely blooms of Gloire de Dijon. He thinks these good old Roses worthy of being extensively grown as the hardiest and most persistent bloomers in cultivation.

—AT THIS PERIOD of the year when preparations are being made for the spring and early summer decoration of the conservatory, the value for this purpose of the EARLY-FLOWERING CLEMATISSES should not be overlooked. Plants of these Clematises in 8-inch pots, or even less, flower most freely and produce an effect which cannot be surpassed by any other plants. All that is required for success is that the last year's shoots be matured, and a viney being started will do the rest, for the steady progressive temperature necessary for the Vines is suitable also for the Clematises. A few which are suitable for early flowering are Albert Victor, lavender; Miss Bateman, white; Lord Lonsborough, mauve; Lady Lonsborough, silvery grey; Fair Rosamond, blush white, scented; Standishii, light purple; Stella, deep mauve; The Queen, lavender; and the double varieties Fortunii, John Gould Vetch, Lucie Lemoine, and Countess of Lovelace. No other conservatory plants can excel these in beauty during their flowering period, April, May, and June, according to the amount of forcing to which they have been subjected.

—PROMINENT attention has recently been given to the deficiency of colour of Mrs. PINCE'S MUSCAT GRAPE. There is reason to suppose that this Grape has been, as a rule, subjected to an extreme of cool treatment. When it was found that it would ripen without the high temperature usually given to Muscat of Alexandria, the fact was interpreted too freely, and Mrs. Pince was extensively planted in houses altogether too cold for its requirements. It is a Grape which is long in ripening, and if it is grown in a cool house the Vine must be started early with the assistance of fire heat in order to provide a long season of growth. It is a Vine, too, having small foliage, and should not be subjected to such close pinchings in summer as other varieties will endure without injury. With a higher temperature and a longer period for maturation, and a more liberal allowance of foliage, there is good reason to expect that the appearance of this Grape would be much improved, its good quality being generally admitted.

—IN A LETTER received from Newbury, Canada West, dated December 16th, 1876, it is stated that Fahrenheit's thermometer has already registered 42° of frost—that is, 10° below zero; and on the above date, with a high wind drifting the snow about, the glass stood at 5° below zero. Last summer was intensely hot, and the Wheat crop which promised well

up to within a few days of ripening was attacked with rust, and the final result only came up to one-third of the average. Indian Corn was a heavy crop. Apples were most abundant, many of them having been sold at 10d. per bushel to be shipped to Great Britain. Trade is said to be very dull in that colony this winter.

— Owing to the protracted wet many BULBS, such as Hyacinths, Tulips, Crocuses, &c., which ought to have been planted in the autumn, are still in paper bags. If these bulbs have not grown too prominently they may still be planted, especially if covered with light soil such as decayed leaves or cocoa-nut fibre refuse. We have seen excellent beds of Hyacinths and Tulips from bulbs planted in January, but Crocuses planted at the same period have many of them decayed. The decay of bulbs is accelerated by making smooth holes for them with a blunted dibber—water traps. The bulbs should be planted in open drills in well loosened soil and be carefully covered with light material, so that the water can pass freely away. Bulbs planted now should not be covered so deeply as when planted in November; 1 or 1½ inch of light covering is sufficient at this period of the year.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THE weather is still so excessively wet that very little can be done to the quarters or borders in the way of digging or even wheeling the manure to them. We have continued pruning dwarf and standard trees, and also have proceeded with nailing the wall trees. Instructions for this work were given in recent numbers. Slugs have flourished amazingly owing to the wet and mildness of the weather. Frost and great depths of snow have been recorded from the north, but we have had no snow to speak of; it fell for a few hours a fortnight ago, but did not remain on the ground. The glass fell for a few nights below the freezing point, but not enough to arrest vegetation, and Roses and many flowering deciduous shrubs are hustling into buds. The most effectual way to destroy slugs amongst Lettuces, Cabbages, &c., is to dust the plants with quicklime by the aid of a lantern when the slugs are feeding. Dusting the leaves thickly does no harm to the plants. The lime may be applied a second or third time if the slugs are not destroyed.

Those who have to do with heavy clay soils which have been well drained will be sensible of the advantages of the draining; the ground will dry so much sooner after rains, and, if it has not been brought into good condition by trenching, this should be done at once. We have years ago seen the evil of trenching clay soils too deeply without taking care that the work was done gradually. For instance, say that a portion of good soil over a clay subsoil has been dug for many years to the depth of 10 inches, it would not be wise all at once to trench this to the depth of 20 inches or 2 feet; the pulverised soil on the top would then be the bottom 10 inches, and there would be 10 inches of unworked clay soil on the top, a bad medium in which to trust seeds or small plants in a wet season. Our plan with such soils is to work up a depth of 2 or 3 inches of the subsoil at each time of trenching until the required depth is attained. The vegetable refuse heap comes in useful for mixing with the subsoil, and if leaf soil is plentiful it is equally well adapted for the purpose. Stable manure is also much better adapted for such soils than that obtained from the cow or pig.

Pay strict attention to the beds of Lettuces out of doors, and see that decay and weeds are removed from them, and the ground is stirred with a Dutch hoe when the weather is sufficiently dry. Those plants under hand-lights, frames, or any of the numerous glass protectors should receive plenty of air, and the ground ought to be stirred with a pointed stick frequently. Cauliflower plants under glass require the same treatment.

FORCING HOUSES.

With the advent of the new year forcing of vegetables must be commenced in earnest. The Potato is easily forced, and is much esteemed early in the year. It may be grown on a hot-bed, or what is better in a heated pit. Only those sorts that have short haulm should be planted, and they ought to be freely ventilated after their growth has commenced. The pits and frames require to be fumigated occasionally to prevent the attacks of, or to destroy green fly. The Potato plants ought to be in a position where they receive the direct rays of the sun; a close moist atmosphere is not at all desirable for them. The best sorts are the true old Ashleaf Kidney if it can be obtained. There are many "improved" varieties, most of which are not so early, although they are prolific and have generally too much haulm. The Walnut-leaf Kidney is distinct from the above, and also well adapted for frame or pit culture.

Dwarf Kidney Beans when well grown afford a supply of most acceptable dishes. The Beans can be sown in any temper-

ature from 50° to 65°. In the higher temperature they come on more rapidly. What they require to produce abundantly is moderate pot room, a good rich loam, and being placed near the glass in a moist atmosphere. Some gardeners use pots as large as 12 and 15 inches in diameter, but such take up much room and are troublesome to move about; 7 and 8-inch pots are quite large enough with five or six plants in each. It is a good plan to sow thickly in a box, and when the seed leaves have grown to the full size to pot the plants, burying the stems in the soil up to the bottom leaves. It is necessary to syringe from the first to keep the plants free from red spider and thrips, and the pots should not be too close to each other. The blossoms must be exposed to light and air or they will not set well, and some of the pods will die off prematurely. A few sprays of Beech or Hornbeam should be placed in each pot to support the plants. Directly the pods are large enough they ought to be removed from the plants, whether they are required in the kitchen or not. A good plan is to tie them up in bundles of say fifty, and place each bundle in an upright position with the ends of the pods just covered with water; they keep best in a cellar. If the plants are supplied with manure water they will continue bearing for a long time.

Diets of early Peas may also be obtained by placing the plants on a shelf near the glass. They require more air and light than the Beans, and cannot stand such a high temperature; in other respects the treatment required is the same. A light or two over a hotbed may be used for a crop of French Forcing or Early Horn Carrots; a gentle heat from a bed of leaves is as good as anything. Six inches of soil about the place of the bed, and the seeds be sown in shallow drills. A sowing of the French Breakfast or Dwarf Turnip Radish may also be made on the same bed at the same time. The Radishes can be removed before they do any injury to the Carrots. Lettuce of the Paris White Cos type should also be sown under glass at this time, to produce an succession crop to that put out in the open ground or on a warm border facing south in the autumn.

Succession lots of Seakale and Rhubarb should be put into any place where the temperature ranges from 50° to 65°, instructions for which have been given so recently that no more need be added at this time. Some persons may not have the convenience of forcing houses or frames; such may have a supply of Seakale and Rhubarb by covering a portion over with fermenting material of some sort. It is necessary first to cover the crowns with pots 2 feet high, and about 15 inches in diameter, rounded at the top in the form of a bell-glass; a hole is made in the top, through which a lid is fitted, a bed of stable manure and leaves is then made around the pots, enough to cover them 6 inches deep. Excellent Rhubarb and Seakale is produced in that way, but it does not come on so fast, and the method is not so convenient as forcing the roots in houses.

Plenty of variety may be obtained in salads. Chicory may be had with the greatest ease. Eighteen roots may be potted in 10 or 12-inch pots, and the pots placed in forcing houses as they are required. Mustard and Cress will do anywhere if there is sufficient heat. The seeds ought to be scattered thickly on moist soil, and it is better not to cover the seeds, as the leaves that way are more free from grit, which is not easily washed from the salad. Mint, Tarragon, Parsley, and other herbs should be potted if they have not already been done, and they must be placed in heat according as there is likely to be a demand for them. The pots may either be forced upon hotbeds, or they may be placed in forcing houses where there is artificial heat.

Forcing Flowers.—A heated pit with a bed for plunging the plants in ought to be devoted to this purpose. A small house 20 or 30 feet long and 12 or 14 feet wide will produce a large quantity of flowering plants during the season, because as the flowers open they can be removed to the greenhouse and others be brought in to supply their place. Foremost on the list is the Rose. The last Rose of summer is a poor thing, although it may be found much later in the year than formerly; but the first Rose of spring is a treasure indeed. To be forced early the plants must be pruned early, and the buds will start strongly and well in a temperature of from 50° to 55°, and with a bottom heat of 85° or 90°. Water the roots moderately, and syringe overhead at least once a day with water rather warmer than the temperature of the house. Some of the most free-growing Hybrid Perpetuals and Teas are best adapted for forcing.

Hybrid Rhododendrons, which have now become so popular for shrubbery planting, may be forced with the greatest ease; but it is well not to place the pots in the plunging material, and it is not at all necessary that the plants should be near the glass, but may be relegated to the darkest part of the house. Let them be freely syringed and not suffer for the want of water at the roots, and in the same temperature as the Rose bushes they will soon come into flower. The plants may be lifted from the open border, potted at once, and forced almost immediately. Of course, only those well set with blossom buds should be chosen. When the first flowers open remove the plants to the greenhouse, where the remaining flowers can the

trusses will gradually expand, and they remain a long time in beauty. After flowering let the plants be gradually exposed to the open air, and in May they should be planted in the border from whence they were lifted.

Deutzia gracilis is a favourite plant, easily forced, and continues for a long time in beauty; its clusters of pure white flowers have a charming effect, and are a most distinct feature amid the dark foliage of *Rhododendrons* and the lively green leaves of the *Rose bushes*. Lilies, too, are most enjoyable, and who would be without a few small bushes now that they can be obtained at such a cheap rate ready for forcing? They are easily managed, and the above directions apply to them. Shelves near the glass may be fitted-up for *Hycacinths*, *Tulips*, *Polyanthuses*, *Narcissus*, and other Dutch bulbs. A few pots of *Diosytra spectabilis* ought also to find a place. Clumps of this when well grown form a very striking feature. The roots, as also those of the *Lily of the Valley*, are better with a little bottom heat.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Downie & Laird, 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

John Jefferies & Sons, Market Place, Cirencester.—*Illustrated Garden Guide, and Catalogue of Vegetable and Flower Seeds, &c.*

Vilmorin, Andreux & Cie., 4, Quai de la Mézisserie, Paris.—*General Catalogue of Flower and Vegetable Seeds, Strawberry Plants, &c.*

H. & F. Sharpe, Wisbeach, Cambridgeshire.—*Wholesale Catalogue of Agricultural and Garden Seeds, and List of Seed Potatoes.*

Richard Bradley & Sons, Halsam, near Southwell, Notts.—*Abridged Catalogue of Roses and General Nursery Stock.*

James Wm. Mackey, 40, Westmoreland Street, Dublin.—*Illustrated Seed Catalogue and Amateur's Guide.*

TO CORRESPONDENTS.

All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

VIOLETS.—"D. W." inquires where *Violets odorata pendula*, *Biancayana*, *Reins Louise*, *Beauty of Louch*, and *Wilson* can be purchased. He has applied to several nurseries, but cannot procure any.

SULPHATE OF AMMONIA (Red Hill).—It dried it may contain 94 per cent. of ammonia, but if crystallized it contains about 92 per cent. It may be applied to any growing plant. Half an ounce to a gallon of water is sufficient.

ARBUCLAS.—"G. S." wishes for the direction of florists in the north of England who can supply *Arbutus*. If they advertised, our correspondent sends a brick bond and would soon see out any grower.

CORON FERT TREES (P. M.).—The distance of 30 yards will take five trees, the first trees to be 9 feet from the ends of the wire, and the three intermediate trees being 18 feet apart. They may be planted wider than that, but the trees will take so much longer to fill the space.

MANAGEMENT OF CAMELLIAS AND AZALEAS (Youthful Amateur).—We think you are rather impatient. If the *Camellia* buds do not drop they will swell out and open in 3 or 4 weeks. The distance of 30 yards will take five trees, the first trees to be 9 feet from the ends of the wire, and the three intermediate trees being 18 feet apart. They may be planted wider than that, but the trees will take so much longer to fill the space.

POINSETTIA PULCHERRIMA (Idem).—This plant blooms best in a temperature of from 50° to 55°; but will do with a lower minimum, say 55° for an average, a few degrees lower and higher than this according to the weather. The leaf enclosed seems to be from a species of *Funkia*.

MOULD ON ENCYCLAM CORNS (A. F. B.).—The mould will not injure the corns, as we apprehend it is a mossy covering consequent upon the plants having been kept very moist in an ill-ventilated atmosphere, the surface of the pots as well as the corns having the same green mouldy covering. Remove it from the surface of the soil with a piece of wool, and also from the corns if it comes away readily and may be done without injury to the skin, leaves, and flowers, which must not be damaged.

CHINESE PALMS FROM CUTTINGS (Idem).—Except for the double varieties propagation from cuttings is not nearly so good as raising plants from seed. The cuttings are best taken so soon as the winter is past, or from March to June, they requiring a rather close and warm atmosphere with shade to root freely.

OLD PLANTS OF CHRYSAANTHEMUS (Idem).—We should not keep the old plants only to give what cuttings were needed in March, and if none were required at that time we should throw the old plants away. We have fre-

quently directed the old plants after flowering, cutting away most of the old roots and potting in entirely fresh compost (all the old being shaken out) into 5 or 6-inch pots, keeping the plants in cold frames until April with abundances of air during mild weather, and shifting into larger pots then, and giving the flowering pots early in June. They did fairly, but the flowers were neither so large nor well formed as those afforded by plants from cuttings.

CARPET-BEDDING PLANTS FROM SEED (P. F. S.).—The *Coronaria*, *Cinoraria*, and *Mesembryanthemum* may be raised from seed, but are much better raised from cuttings. The seed may be sown thinly in pots of light soil, covering the seed very slightly and keeping the soil regularly moist, the pots being placed in a hotbed until the seedlings appear. After that a light and cool position must be afforded to harden the seedlings, which must, when large enough, be pricked-out in boxes or be potted singly in very small pots. *Colosseum* must be raised from cuttings. These and cuttings of all the plants mentioned will strike readily in sandy soil in your hotbed, affording moisture and shade to prevent the cuttings from flagging. We advise your procuring cuttings of the plants you require.

LILY OF THE VALLEY (Fifteen-years Subscriber).—The roots are not dead, but will grow and produce flowers in due time.

CLIMBERS DEFORMED (R. S. F. Gillingham).—Remove the decayed flowers, and, if possible, place the plants in a little more heat. They will improve as the season advances. The name of the plant is *Garrya elliptica*.

REMOVING TREES FROM A NURSERY (E. E. E.).—All trees, shrubs, and plants that you are a nurseryman, have planted in the nursery as stock-in-trade you can remove. If any of the trees have become too large for removal you must leave them uninjured, and cannot enforce payment for them from the landlord.

NAMES OF FRUITS (Bob).—Your Apple is *Court of Wick*. (J. J. S.).—The Pears were *unripe*, and we are sorry that we are unable to identify them.

NAMES OF PLANTS (Idem).—All forms of the purple variety *V. salicifolia*. (*A. Baderi*), *V. polydora villosa*; 2 and 3, *Lactuca scariola*; 4 and 5, *Scopolendium vulgare*. (*R. Matfield*).—*Leucodendron argenteum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY AND BIRD NEWS.

In the *Journal of Horticulture* for August 3rd last we described the result of a sitting of *Laghorn* eggs sent from Mr. G. Brown of Brookville, U.S.A., to Mr. Norwood of Salisbury. The eggs had hatched on June 23rd last, and several of the pullets from them laid when only five months old. We learn that the third-pipe pair of this breed at the late Show at Kingston-on-Thames came from this hatch. We observed them there because of their spotless purity of plumage and the colour of their legs, which were of a deeper orange hue than any we have before seen.

We know of one amateur who keeps two breeds of poultry, and those of kinds which most frequently have to go into a variety class. He has exhibited seventy-two pens in 1876 and won sixty-two honours. Of the ten other pens twice the judge missed them when making his awards. We consider this good work, and it shows us what an amateur can do. These birds have only been kept in enclosed runs in town gardens.

We wonder *Silkie*s are not more kept for useful purposes. They can always be depended upon for laying or being broody at this season. It is true they do not cover very many eggs, but they take every care of what they have, and rarely do one come to grief. We know of one exhibitor in the midland counties who has seven of these birds now sitting, and we have some broody hens ourselves waiting for eggs. The breed is to have a class at the coming Aquarium Show at Westminster, and as a certain number of entries had to be guaranteed we hope all will enter a pen who keep the variety, or the loss will fall upon private shoulders.

Torbis seem to be the present fashion in Toy Pigeons. Mr. Salter has lately sold a Black for £40. Mr. O. E. Cresswell has recently refused £20 for one of the same colour, and a Blue was sold at Birmingham we believe for £12.

It will be remembered that a few weeks back we recommended the fanciers of the various breeds to make themselves into clubs like the *Laghorn* fanciers had done. We hear the Spanish breeders have done this, and that one or two more such clubs are on the tapis. After this we shall want one large general club to embrace all these subdivisions, and so make, if possible, all fanciers members of one body without cliques or petty jealousies.

The Oxford Committee are already at work getting up cups and classes for the neglected breeds for another year's show. There will be, we hear, £10 10s. cups for Black Red cockerels and pullets, and a large sum of money has been offered to provide Langshan classes. We hope the Committee will refuse this offer, or suggest that the money should be expended in classes for *Pekin Ducks* or some other breed where there really is something worthy of encouragement.

We are glad to say the defaulting Committee of the Portsmouth Summer Show have been brought to book. The Hon. and Rev. F. Dutton placed the matter in the hands of his solicitor, who issued a summons for the amount owing. Not only has the prize money to be paid in full, but they have also the

second old birds. In Silver-spangles the great fault (which we find very prevalent in the north) was the bad combs of the cocks. Silver-pencils were good as regards the winners. *Dorkings* very good, especially the first, which were Silver Greys; and *Sprungs* were very good. In *Brahmas* the winners were mostly young, and in the *Polish* class most of the best were White-crested Blacks. *Bantams* had but one class, and in this Brown Reds were first, Black Reds second, and Blacks third; and in the Variety class were some good Houlans and Cochins.

Cage Birds were also good, a Belgian carrying off the champion prize; but there were some very neat Norwich and excellent Green Caucisies, also Cinnamon and Duts.

POULTRY—*Game*.—*Black-breasted and other Reds*.—Special, 1, and 2, T. Brown, 8, J. Rutherford, the W. Armstrong. Any other early—1, 2, and 3, H. Clarke, H. Beechington, J. Dickinson, and J. D. Washington. 2, J. Snowdon. *Golden-pencilled*.—1, E. Walton. 2, C. R. Senior. 3, J. I. Millcan, the W. White, J. I. Millcan, F. J. Snowdon. *Silver-spangled*.—Special and 1, J. I. Millcan. 2, J. Richardson. 3, W. Miles. the F. J. Snowdon. *Silver-pencilled*.—1, W. Jopling. 2, J. Temple. 3, J. Martin. *Dorkings*.—1 and 2, F. J. Snowdon. 3, H. Wilkinson. the J. Armstrong, G. Armstrong. *SPRINGS*.—1, H. Wilkinson. 2, J. Richardson. 3, F. Craig, the G. Moor. *BRAHMS*.—1 and 2, S. Testadale. 3, H. Wilkinson. *POLISH*.—Special, 1, and 2, J. Goodbarrow, 3, E. Thomason. *BANTAMS*.—1, J. Hind. 2, A. Halliday. 3, M. A. Froud, the J. Winkle. ANY OTHER PURE BREEDS.—1 and 2, W. Dodd. 2, H. Clarke, H. Beechington, J. Dickinson, and J. D. Washington. 3, J. Richardson. 3, H. Wilkinson. 3, J. Goodbarrow, 4, S. Testadale, the F. Brown, J. I. Millcan, F. J. Snowdon. *Hens*.—1, T. Brown. 2, 3, and the J. Goodbarrow. *Ducks*.—1, W. W. Day. 2, H. Wilkinson. 3, J. Richardson.

PIGEONS—1, T. Brown. 2, W. Graham. 3, R. Clark. **CAGE BIRDS**.—*CANARIES*.—Belgian.—Special, 1, and 2, T. Brown. *Yellow*.—1, and 2, T. Brown. 3, T. Robinson. *Yellow-marked*.—1, G. Moor. 2, T. Brown. *Buff-marked*.—1, W. Thompson. 2, T. Brown. *Green*.—1, H. Barton. 2 and 3, G. Armstrong. the M. Robson. *Dun*.—1, T. Brown. 2, H. Barton. 3, T. Robinson. *Combe*.—1, G. Moor. 2, J. Dickinson. *WATTLE*.—1, J. Rutherford. ANY OTHER VARIETY.—1, T. Brown.

JUDGE.—Mr. E. Hatton, Pudsey, Leeds.

THE PERISTERONIC AT THE CRYSTAL PALACE.

This Show is different to other shows, and the difference is for once of the pleasing kind, for differences are not always pleasing. "Other Pigeon shows," as one happily and neatly put it, "are competitive, this is comparative." No eager hasting with palpitating heart to the pens to see whether you have secured a prize, for prizes there are none; no agitation about the colour of the cards, for cards there are none; yea, not even a catalogue to get any over its bad arrangement, for catalogues there are none. Then, instead of little pens to bring down "the R's" wing, to the pen, and very late; and for a last instead, not a last looking frightened in a corner all by itself, or two making love or quarrelling, so like unfeathered bipeds, but a dozen or more in some cases, as in the *Almonds*, and the dear little *Black Mottles* a perfect carpet of soft-feathered beauty. 'Tis a friendly meeting of fanciers, so no fear, though it is held in the tropical department, that people will get hot. Old faces—*e.*, well known for some years, are around me; not old in another sense, for fanciers seem to me never to get old. I don't know one on two sticks, and if there be a fancier with one it is not for support, but only to pass carelessly over some pet *Ponters*' back.

No catalogue—no beginning to this Show. "Where shall I begin?" said I to a brother fancier. "Why, begin anywhere—here, pointing to the *Ponters*. Ah! he was a *Ponters* fancier, and so, deep dog, tries to get his class put first, and so for once he shall. *Ponters* not *Carriers* first. 'You *Ponters* are true to your name, for *Pont* you can, and no mistake, while *Carriers* can't carry."

Ponters.—Messrs. J. Gresham, Hill, Gill, and Hives sent specimens from their lofts. Mr. Gresham's birds being the row, and proud may be well be, particularly of a young *Black hen* in her teens; no, I mean in her months. A truly beautiful bird, which looks like a cock as to size. Legs very excellent, and particularly long in the shio. A very fine bird, would that he had been raven black. A very graceful young *Yellow hen* is another noteworthy bird of Mr. Gresham's, and a pair of very good coloured *Rods*. Capt. Hill sent some good birds from his stud, worthy of Castle Hill; the king of the castle being his old *Bine cock*, though lighter on the leg, and very tight in girth is his young *Blus*. Mr. Gill and Mr. Combe's birds followed, and were worthy.

Fantails.—Well, they are next, and no shall come next. Messrs. Maynard, Hemming, and Thurlkel were exhibitors. Those of the first-named were singularly beautiful, and in nestness, style, and elegance were supreme. Mr. Maynard's seems now to hit the man with English tail and Scotch grace, and motion.

Maggies only one pen—Mr. Herbert's.

Owls.—Messrs. Esquilant, Thomas, Stevenson, Jones, and Schwetzer sent birds. These were naturally from their owners, very worthy. Strange what a reaction has set-in in favour of English *Owls*, which but a few years since were to be annihilated; not that there were not some few exquisite *White Africans*, and a pair of *White with black tails* of Mr. Stevenson's. The exhibitors were Messrs. Combe, Hardy, Stephens, n. Thurlkel, Jones, Taylor, and South. Some few were the old-fashioned plain-headed. Mr. Hardy's were very fine; and Mr. Jones's, one especially of

his, a *Kite-barred Silver*, not a good colour indeed, but with a beautiful head. Good in face were some also of Mr. South's; while certainly some of our exhibitors' birds were overlaid. Two such of Mr. Stevenson's were excellent in colour, it being a sound *Yellow*.

Jacks were very numerous. Messrs. Combe, Hardy, Maynard, Royde, Jones, Betty, Bird, Heritage, and Eadsen, sent from their lofts. I admired much Mr. Betty's *Yellows*; he seems particularly lucky with that colour in Pigeons. Their chains of great width, the mass well up, and the chain coming well forward. Much ground seems now to be gained in this class, as colour, mane, chain, but narrowness of shoulder and forwardness of head are still to be won. Whites are advancing, though most as yet in points behind the others.

Barbs.—Messrs. Chandler, Maynard, Jones, Hedley, and Heritage showed specimens. Mr. Hedley's capital *Black* and *Rods*, Mr. Jones's *Reds* and *Yellow*, while Mr. Maynard was prominent with a pen of young *Blacks*.

Antwipers.—Messrs. Cocksey, Flecker, Chandler, Theobald, and Tegetmeier sent some of these useful birds; while Mr. Hudson, who, as one said, must have as many birds as the King of Oude himself, sent large pen after large pen of *Homers*. One pen of very uniform *Silvers* of his I greatly admired, also a pen of *Bine Chequers*, the right *Chequer* after all.

Pigmies were from the lofts of Messrs. Tegetmeier and Hives. The latter-named gentleman also exhibited some very laudable whole-coloured *Jacobins*. The points were not over-good, but the change in colour pleasing, while the bloom was like a black drake's. Mr. Hives had also those *Malay-like Pigeons*—*Scandarrons*, richly coloured uglies.

Sally late in my account must now come the *Carriers*—from fifteen different lofts, their names known to all fanciers. Magnificent birds were shown by Col. Hassard, Messrs. Crisp, Hedley, Ord, and others. Perhaps those to notice especially are the Whites. The Colonel had a *White bird* there of great excellence, no *Dragon*, but a *Carrier*. So also another fancier, Mr. Hodgson I think, and Mr. Crisp. Now, I do trust that when a class for *White Carriers* is offered it will be filled, not by big *Dragoons* or *Horsemen*, but by the genuine birds. This I must chronicle as the advance in respect of *Carriers*.

Dragoons were hardly so numerous as usual of late. Messrs. Thomas, Keeler, Betty, Whitehead, Sargeant, and Tegetmeier sent fine specimens. Mr. Sargeant's *Yellows* were very attractive.

I have reserved the *Short faces* for last. Little genes indeed. Their exhibitors were Messrs. Hemming, Ford, Merce, South, Murphy, Newman, Jayne, and Taylor. Some pens were empty. If the young of *Almonds* of various shades, from the light colour of the young to the dark of the old; some excelling in head and beak, others birds of colour. Interspersed with showy *Agates*, and one pen (would there had been more of the prettiest of the pretty) *Black Mottles*, Mr. Hemming's. Mr. Ford's *Almonds* were worthy of so good a breeder, and Mr. Jayne's. Mr. South had two pens, one of *Balds*, the other of *Black Beards*. The *Short-face* part was, I noticed, much crowded and much criticised.

As a whole this Show was a very pleasing and good one. We were asked not to look at jaded over-shown birds, but birds fresh from lofts, often lofts of those who never show for competition; hence the result was pens of neat, trim, healthy birds. The Society does the fancy credit and itself honour by such an exhibition. It is also a hospitable Society, for a lunch was provided, where one chatted agreeably with old friends and made new acquaintances.—WILTSHIRE RECTOR.

THE BATTLE OF THE HIVES.

Which is the best hive? is an old subject of controversy—as old as the hills. In this Journal, as elsewhere, this question has often led to many a keen discussion, but it is one which is not confined to this country alone. In America especially the "battle of the hives" has raged with far greater fury than here, so that among the numerous patented "best hives" brought out there, and they are legion, the most recently invented is usually announced to the confiding public as the superlative of all.

While admitting that there are many aspects or phases of this question which might be very properly and profitably discussed either as regards definite or general objects, yet the simple question itself, "Which is the best hive?" has always appeared to me a very foolish one. Certainly I could not wish all my experience presume to answer it, and I could not wish any intelligent sparian better able than myself. If such a question were asked of me, I could only reply after the Irish fashion of questioning my questioner, with the view of ascertaining what is meant by "best."

In the controversy presently being carried on in these pages, entitled "Hives," "Moveable versus Fixed Combs" &c., notwithstanding a great deal of extraneous and irrelevant matter introduced in regard to the facilities and uses of moveable frame hives and the assumed connection of the straw skep with the

sulphur pit, I think I can discover that the old and, as I thought, exploded idea—that to the kind of hive we are indebted for large honey results—still haunts the minds of some of our apiarian brethren, and that therefore the real question raised in this controversy, and which is at the root of it all, is simply this, "Which is the best hive for producing most honey?" Assuming, then, that I am right in this view of the discussion, let us see how the matter really stands.

On the one side we have your indefatigable correspondent Mr. Pettigrew, the staunch advocate of the large straw skep with its fixity of combs, and on the other side Mr. Briscoe and your old and excellent correspondent "A RENFREWISHRE BEE-KEEPER" in support of the bar-frames or Stewarton hive, each claiming for their respective favourites the advantages of producing the largest honey yields. Now, I have gone over all the communications of these gentlemen with the greatest care, and I have failed to notice a single particle of evidence adduced either that the straw hive, in virtue of its being straw, has any advantages over the Stewarton, or *vice versa*, the Stewarton, in virtue of its being a Stewarton, over the straw hive in producing the alleged honey results.

Mr. Pettigrew has, it is true, shown that both in his own apiary as well as in others immense stores have been collected by bees domiciled in straw hives, and this, no doubt, with the object of proving that they are the best honey-producing hives; but while he does this, why does he acknowledge to feel "staggered" in his faith in the "straw" in reading the report of the Renfrew success? In the Stewarton, unless he begins to doubt at first of both either the one domicile or the other, apart from system, has anything to do with results so far as weight of stores is concerned?

"A RENFREWISHRE BEE-KEEPER," however, has seemingly more faith in his Stewarton than Mr. Pettigrew in his "straw." All doubts on his part seem to be dispelled, if indeed they ever existed. After referring to unfair comparisons, the one hive with the other, in different localities, he triumphantly asks, "If a straw skep yields 96 lbs. in South Devon, what would a Stewarton colony there give?" and we have then a narrative of "facts" from his own apiary in evidence of the Stewarton's superiority over the straw hive. According to this narrative there stood in his garden two colonies, one located in a roomy straw skep and the other in Stewarton boxes. Both were presented with queens of the same age, and each had an overflowing population. Being thus treated equally matching, both were treated according to the same system, all depriving hives, and so with the view of testing their relative merits as honey-producers. The result was that the Stewarton yielded 68 lbs. in super honey, the straw about 21 lbs., while the former had amassed large stores in the boxes below, but the straw skep, relieved of its super, required feeding.

Now, I rather think that no intelligent apiarian can accept this narrative of facts as a test or evidence of the superiority of the Stewarton over the straw hive at all. The same results might occur even if the competing hives were both Stewarton. Similar differences take place in every apiary, and that too betwixt hives apparently working under equally favourable circumstances. In not a few cases we could determine the cause, and, considering the impoverished state of the stock straw hive referred to after removal of the super, there is some ground for suspecting that all was not right with that colony. If "A RENFREWISHRE BEE-KEEPER" thinks the reverse, he will kindly state how the results are to be otherwise accounted for. Is it by reason of the form, material, or construction of the Stewarton hive which enabled it to eclipse so greatly the straw skep in the amassing of stores? or what is it? "A RENFREWISHRE BEE-KEEPER" so far explains his views in one of his communications by comparing the old straw skep to the "antiquated rasping hook," and his favourite hive to an "improved implement or Stewarton hive;" but I doubt how far apiarians generally will concur with him in this illustration. Most of us, I presume, look upon the hives, not as the "raspers," but simply as the storerooms in which the bees, the real rasps, amass their sweets.

The "bottle of the hives," in this aspect of it, is not a new affair. We have had the question more than once discussed in these pages, but it ever and anon crops up anew after a brief repose, and though always set at rest for the time, yet, like the Phoenix in its ashes, it again rises up with renewed fury; but I have no doubt that the good sense and intelligence of all concerned will occur, as before, in coming to the conclusion that no such adventitious circumstances as the kind of hive alluded to can have much or any influence on the amount of stores collected by the bees.

Before concluding these few remarks, I cannot help joining with Mr. Pettigrew in protesting against the idea of straw hives being in any way whatever allied to the brimstone pit, nor can I sympathise with any of the depreciatory remarks regarding its general uses as a bee domicile easily managed by our cottagers. Apart from such advantages which our observatory, frame, and Huber hives afford for experimenting, and studying the internal

economy of the hive and the natural history of its wonderful inmates, we do not look upon the modern straw skep with dis-favour. It has some redeeming points of excellence as a bee domicile in our cold northern climate. It is cheaply made and can be easily managed, and many of the ordinary operations of modern bee-keeping can be managed as safely and as well with straw skeps as with moveable frame hives.—J. J. LOVIE.

OUR LETTER BOX.

FOWLS WEAKLY (Mrs. W.).—Feed your fowls well, give them good oats twice per day, and any rough cooked meat you may have chopped-up small. If you have no ground oats give them barley.

LICHTIAN BEES (Mrs. Wray).—Write to any of those who advertise in our Journal.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 52' 4" N.; Long. 0° 9' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.		Rain.
	Hygrometer.	Direction of Wind.	Shade Temperature.	Radiation Temperature.	
1877.					
Jan.	Bromide of Ammonia Level.	Dry. Wet.	Temp. of 1 Foot.	In sun. In galls.	
	Inches.	deg. deg.	deg. deg.	deg. deg.	Inch.
We. 3	29.55	55.0 45.3	S.	44.0 54.3	0.14
Th. 4	29.69	50.0 49.3	S.	44.7 51.8	0.44
Fri. 5	29.27	46.1 44.9	S.W.	45.0 52.3	0.39
Sat. 6	29.315	41.1 41.1	S.	44.3 51.7	0.48
Sun. 7	29.198	53.2 47.1	S.W.	44.5 51.8	0.40
Mo. 8	29.539	49.0 48.2	S.W.	45.1 51.2	0.38
Tu. 9	29.717	47.4 47.1	W.	45.5 53.0	0.57
Means.	29.339	47.4 46.4		44.6 51.9	0.41

REMARKS.

- 3rd.—Showery all day, and wet evening.
 - 4th.—Very wet morning, showery dull day; fine evening, but wet night.
 - 5th.—Fair early, bright forenoon, cloudy by 1 P.M.; showery all the remainder of the day, and windy at night.
 - 6th.—Dull and damp all day, and windy at night.
 - 7th.—Raining at 9 A.M., but fair soon after to midday; rain in afternoon, and at times heavy.
 - 8th.—Very dull, dark, rainy day, at times unusually dark.
 - 9th.—Dull morning with showers; but fine afternoon.
- Temperature very similar to previous week, and rainfall excessive. The yearfall at this station being on the average about 23 inches, it is evident that the fall in each week (25-53) may be expected to be about half an inch. The fall in the last nine weeks has been as follows:—Week ending
- | | | | | | |
|-----------|------------|--------------|-----------|------------|--------------|
| Nov. 14th | total rain | 1.246 inches | Dec. 19th | total rain | 0.791 inches |
| " 21st | " | 1.863 " | " 26th | " | 2.679 " |
| " 28th | " | 0.992 " | Jan. 2nd | " | 1.255 " |
| Dec. 5th | " | 1.673 " | " 9th | " | 2.017 " |
| " 12th | " | 0.683 " | | | |

Giving a total in nine weeks of 12.671 inches, or exactly half the usual fall in a twelve-month—that is to say, we have had six months' rain in the last nine weeks.—G. J. SYMONS.

COVENT GARDEN MARKET.—JANUARY 10.

ALL kinds of early forced vegetables—such as Asparagus, New Potatoes, Rhubarb, and French Beans—are now putting in an appearance, and in consequence of slack trade are realising low prices. Peas are restricted to Easter Benri; and No Plus Meuris, while Apples are nearly off the market.

FRUIT.

	q.	s.	d.		doz.	s.	d.	
Apples.....	dozen	0	0	0	Nectarines.....	dozen	0	0
Apricots.....	dozen	0	0	0	Oranges.....	dozen	0	12
Chestnuts.....	bushel	0	0	0	Peaches.....	dozen	0	0
Currants.....	bushel	0	0	0	Pears, kitchen.....	dozen	1	0
Black.....	do.	0	0	0	" dessert.....	dozen	9	13
Figs.....	dozen	1	0	0	Pine Apples.....	lb.	1	6
Filberts.....	lb.	0	0	0	Pines.....	dozen	4	0
Gobs.....	lb.	1	0	1	Quinces.....	bushel	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0
Grapes, household.....	lb.	2	0	0	Strawberries.....	lb.	0	0
Lemons.....	dozen	1	0	0	Walnuts.....	bushel	6	8
Melons.....	each	1	0	3	" ditto.....	dozen	1	2

VEGETABLES.

	doz.	e.	s.	d.		doz.	s.	d.
Artichokes.....	dozen	0	10	0	Mushrooms.....	pottle	1	6
Asparagus.....	dozen	0	0	0	Mustard & Cress, pannel	0	4	0
French.....	bundle	0	0	0	Onions.....	bushel	0	0
Beans, Kidney.....	dozen	1	0	1	Pickling.....	quart	0	0
Beet, Red.....	dozen	6	3	0	Parsley.....	doz.	bunches	2
Broccoli.....	bundle	0	1	0	Parsnips.....	dozen	1	0
Brussels Sprouts.....	dozen	3	0	0	Peas.....	quart	0	0
Cabbages.....	dozen	1	0	0	Potatoes.....	bushel	2	6
Carrots.....	bunch	0	4	0	Spas.....	doz.	8	6
Capisiums.....	dozen	1	0	2	New.....	lb.	1	0
Cauliflower.....	dozen	8	0	0	Radishes, doz. bunches	1	0	1
Celery.....	bundle	1	6	0	Rhubarb.....	bundle	9	0
Coleworts.....	doz. bunches	2	4	0	Salsify.....	bundle	9	1
Cucumbers.....	each	1	0	6	Sourcrainers.....	bundle	1	0
Endive.....	dozen	0	0	0	Wax.....	dozen	0	0
Fennel.....	bunch	0	3	0	Shallots.....	lb.	0	0
Garlic.....	lb.	0	8	0	Spinach.....	bushel	2	6
Garlic, small.....	dozen	0	4	0	Turnips.....	doz.	8	6
Horseshoe.....	bundle	4	0	0	Turpins.....	bunch	0	4
Lettuce.....	dozen	1	0	2	Vegetable Marrows.....	0	0	0
Leeks.....	bunch	0	4	0				

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 18—24, 1877.	Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.				
18	Th	Royal Society at 8.30 P.M.	42.6	31.8	36.9	7 59	4 22	9 37	8 44	4	10	60	18			
19	F	Royal Institution at 8 P.M.	43.1	30.6	32.9	7 58	4 24	9 47	9 55	5	11	8	19			
20	S	Royal Botanic Society at 8.45 P.M.	42.4	30.6	38.5	7 57	4 25	9 57	11 7	6	11	26	20			
21	SrN	3 SUNDAY AFTER EPIPHANY.	42.9	32.0	37.5	7 55	4 27	10 8	morn.	7	11	43	21			
22	M	Royal Geographical Society at 8.30 P.M.	43.1	32.3	37.7	7 54	4 29	10 21	9 23	7	11	59	22			
23	W	Royal Medical and Chirurgical Society at 8.30 P.M.	42.6	32.4	37.5	7 53	4 31	10 38	1 43	9	12	14	23			
24	Th	Society of Arts at 8 P.M.	43.1	32.1	37.7	7 52	4 33	11 2	3 7	10	12	29	24			

From observations taken near London during forty-three years, the average day temperature of the week is 42.8°; and its night temperature 31.6°.

CLIMBING ROSES.

ALTHOUGH not a modern rosarian, I do not consider the Journal quite complete if it does not contain something about Roses. I do not take their omission quite so much to heart as the "WYLD SAVAGE" does, who regards it a very "black Thursday" if his favourites are not mentioned. I do not look upon the Rose with the same eyes as that "child of nature." He looks for each individual bloom being perfect in itself, paying little attention to the tree producing it, so long as that tree is vigorous and capable of perfecting his ideal blooms for cutting and placing in the front ranks of the aristocracy of Roses—if indeed there is such a position in a family admitted to be regal. I look at the trees more than the blooms—Roses in the garden rather than Roses in the exhibition tent. He takes pleasure in cultivating those varieties which require skill to produce them in perfection, and the greater the difficulties he encounters the greater is his satisfaction when having overcome them. Those Roses are the most dear to him which have cost him the most labour. I take pleasure in other Roses—those which are regardless of deep soil, rich manure, the season's fullness, and the pruner's dexterity.

My favourite Roses are those which will flourish without turfy loam or roadside trimmings, and which are proof against serious injury from the nibblings of a few stray sheep. My favourite Roses are those which require no liquid manure, no disbudding, no protection from cold, no shelter from wet, no shading from heat. My Roses thrive in any kind of soil—in clay, or sand, or gravel, or chalk: on any aspect, from the south side of a cottage to the north side of a church—on the keen exposure of the bleak hillside, or in the bowery shade of woodland walks; Roses, in fact, which grow without my care—(I am afraid I am an idle rosarian)—the old-fashioned climbing Roses.

My ideal Rose tree is the old Boursault Rose AMADIS. What a tree that is! not a tender shrub, but a real tree planted at the north side of a villa, and which has grown in wild luxuriance far above the eaves, covering every part of the roof and even embracing the chimneys. When that tree is in its summer dress studded with thousands of blooms the Roses of the garden in their prim proud dignity are dolls in comparison. This real Rose tree is never watered, never pruned, never nailed, and never fails to produce its annual harvest of crimson trusses.

I have other Roses which I admire—which all admire who see them. They drape the walls of a village church, adding beauty to that structure. These Roses are literally "churchyard blossoms," making "God's acre" cheerful, as it should be, by their purity and sweetness. The south side of the edifice is not too hot for them nor the north side too cold. They have bloomed there for many years, even from the days of my childhood until now. They are secured to the walls with iron staples, and are pruned annually with the garden shears, and under this rude treatment they flourish such as no other Roses—no other

climbers of equal beauty could flourish. They are the old, old climbers.

There is the flesh-tinted Alice Gray; the purely white, densely double, wondrously free, Bennett's Seedling or Thoresbyana. There is the light pink of Dundee Rambler; the bright rose, with glossy foliage, of Adelaide Orleans; the bright red and bright red of Gracilis and Fulgens; the charming, in its smallness, its fulness, and its purity, of Felicite Perpetue; and the light crimson and deep crimson of Elegans and Amadis. These are the Roses on my parish church which have lived so long and bloomed so well; so constant are they and so enduring that they seem as if they would never wear out, but appear to whisper the words of Tennyson on the rolling river—

"Men may come and men may go,
But I go on for ever."

Assuredly many have come and gone since these Roses commenced blooming, and in all probability many more will "come and go" before these old-fashioned parochial Roses "belong to the past." No other Roses could exist so long under the same conditions. With my own hands I planted (I was not an idle rosarian then) other and more modern Roses amongst them—not modern now perhaps, yet good—Charles Duval, William Jesse, Chénelode, Lord Raglan, Brennus, Pierre de St. Cyr, La Ville de Bruxelles, Général Jacqueminot, Coupe d'Hebe, Gloire de Dijon; but all are gone except "the Gloire" on the north side and Coupe d'Hebe on the south—both of them beautiful I admit, yet not equal in exuberant beauty to the old-fashioned climbers.

These old-fashioned climbers are also to be seen and admired in other forms and in other places. Being parochial Roses they were, and are, regarded as public property; but that claim has never been abused—indeed, putting it on no higher grounds, there has been no reason for abusing it, for cuttings have been freely given to all who have desired them, and now these old and homely Roses adorn many a humble dwelling, as well as impart a charm—a powerful one—to at least one "great garden" where all the modern Roses are cultivated and cherished. These old climbers are everybody's Roses, and flourish anywhere. They clothe the walls and fences in all aspects and all exposures; they drape long poles and form "pillars of beauty"; they cover banks and knolls, and hang in wild luxuriance over crags and rocks; they form great bold groups in shrubberies—thickets of flowers powerfully attractive from their massive grace and rambling freedom, and they make bright and sweet the shady twisting walks of wilderness scenery—half garden half wood. What other Roses can grow and bloom like these? No others can. Then for gathering in huge armfuls, hamperfuls, vanfuls for festival time—a birthday fête, a society's anniversary, a harvest home—what other Roses can be more acceptable, more admired than these? None can. For these reasons the old-fashioned climbers are my favourite Roses, and I would not that they should be forgotten or their merits ignored. I do not expect them to be recognised by the Rose Society, I do not want them

to be; they are not society Roses, but garden Roses—Roses of and for home, and not for arranging in formal rows in some great city hall or gigantic marquee.

I have not enumerated all the Roses which are suitable for this free and enjoyable mode of adornment, but only a few which are immediately under my notice. There are others of these old climbers which are possibly worthy of mention, and which are doubtless admired in many places, where they form great natural wreaths over some rustic fence, some old wall, some precipitous bank, or some venerable edifice. It is in such places where they are most "at home," where they flourish in their own semi-wild beauty—their charming simple gracefulness. Are there not places some such as these in most villages and in many gardens? then cover them with these old-fashioned climbing Roses.—A PARSON'S GARDENER.

MRS. PINCE'S BLACK MUSCAT GRAPE.

"A GRAND Grape when well grown" is a very general remark made in reference to this variety. The experience which has been recently recorded in the Journal teaches that cool treatment or, in other words, a short season of growth, is not sufficient for the requirements of Mrs. Pince's Muscat. That it has been "well grown" under what is termed "cool treatment" is certain; so has Muscat of Alexandria by Mr. Taylor at Long-leat, also by other growers in other places. But cool treatment, it should be remembered, must not be connected with late starting of the Vines, or the season of light and a genial temperature becomes unduly limited. It is not only not unusual but very common to retard the starting of late Grape Vines to the utmost possible moment—firstly, because of the preservation of the late-hanging fruit, and secondly because of the erroneous, but as yet not quite exploded, notion that late starting and late ripening are essentials to long keeping.

When Mrs. Pince's and other Muscats finish well when grown under "cool treatment" it is generally when the Vines have been started early, and kept steadily growing under a moderate artificial temperature throughout a long period of light. Mrs. Pince's Muscat I have found to ripen perfectly under that treatment, but I have not found it to do so when started late and grown as coolly as possible through a necessarily short season. Evidence has recently been afforded that this Grape has been improved by growing it in a higher temperature than had previously been the case, affording it a longer period of growth. My experience quite coincides with that of other cultivators on the advantages resulting from this change of treatment.

Having noticed that Mrs. Pince's Muscat ripened well with a low temperature I grafted it on a Black Hamburgh Vine in a house in which Vines were grown, principally for the purpose of affording shade for Ferns, Orchids, &c., after the bedding plants had been removed from the house at the end of April or early in May. For the sake of the bedding plants the house was kept as cool as possible, and the growth of the Vines was retarded to the utmost, and they were afterwards grown without the assistance of fire heat. In this house Black Hamburghs ripened perfectly, but Mrs. Pince was far from being perfect. The Grapes were fairly good in flavour, but their appearance was almost repulsive from their greenish-brown skins. The Vine was continued in the same house for four years, but during that time did not perfect one really satisfactory bunch of Grapes. It had what it was said to require, "cool treatment," but it was wrong treatment. I referred to the early reports of this Grape, which were generally so favourable, and here I found, what many persons besides myself had forgotten, that the Grapes first exhibited in such fine condition had been grown under what was termed a "cool treatment," but the Vines had been "started early with the assistance of a little fire heat." Many remembered only the "cool" part of the conditions, having overlooked "early starting" and the "little fire heat" assistance—forgetting, in fact, by far the most important part of the question.

By way of following more exactly the mode of culture originally described as successful I trained my unsatisfactory Vines through the glass division and into the next compartment, where the Vines were started in February. This house was also managed on the "cool treatment" system—that is, the fruit was set at a minimum temperature of 50°, and 60° was never exceeded by fire heat alone. The principle of management adopted was for the fire to do as little as possible, and the sun as much as the Vines could endure. It was still "cool treatment" according to the general acceptance of the term,

but was sufficient for Mrs. Pince's Muscat, which now produced Grapes more highly esteemed by their owner than any other variety. The Grapes which the same Vine formerly produced of a reddish-brown colour now became black, especially on those laterals which were not overcropped and which carried a large proportion of foliage, say four to six leaves beyond the bunch.

I had written thus far when the Journal arrived, and where I note that further testimony is given of the importance of affording Mrs. Pince more heat and a longer period of growth than has been customary. I am satisfied that if this plan is carried out (of course in conjunction with good and well-managed borders) less complaints will be heard of the failure of what I believe to be one of the best late black Grapes in cultivation, for Mrs. Pince is undoubtedly a "grand Grape when well grown."—A RETIRED GARDENER.

SELECTIONS OF SEEDS.

I NAME only those kinds that are always reliable, and so far as I know the best, taking quality and quantity into consideration.

Peas.—Early: *William I., and a few days later Alpha. *Dwarfs*: Bine Peter and Unique. *General crop*: *Dr. Maclean, G. F. Wilson, and *Culverwell's Prolific Marrow. *Late*: *Premier, Ne Plus Ultra, and as a dwarf *Omega. *Broad Beans*.—Early Longpod, *Seville Longpod for early; Monarch Longpod and *Windsor Improved for main crop. *Dwarf Kidney Beans*.—For early and forcing Osborn's New Forcing; and main crop, *Canadian Wonder and Negro Longpod. *Running Beans*.—*Scarlet Champion. Mont d'Or Butter Beans are by some very much esteemed.

Broccoli.—*Dwarf Green Curled and Cottagers' Kale. *Broccoli*.—*Winter: Snow's Winter, preceded by *Veitch's Self-Protecting Autumn. *Spring*: Veitch's Spring White, Culling's Matchless, *Leamington. *Late*: *Lander's Goeben and Sutton's Perfection. It is presumed that Broccoli (Cauliflower) are demanded from November to June. *Brussels Sprouts*.—*Strymer's Giant. *Cabbage*.—*Hill's Dwarf Incomparable, *Wheeler's Cocoa-nut, Nonpareil Improved, and Wheeler's Imperial. Red Dutch for pickling. *Savoy*.—*Drumhead, Dwarf Green Curled. *Spinach*.—Round for summer, prickly for winter. *Cauliflower*.—Early: Dwarf Erfurt Mammoth. *General*: *Walcheren. This is usually classed as a Broccoli, but how is unintelligible.

Celery.—*Leicester Red (Major Clarke's Solid Red), Williams' Matchless Red, *Sандрingham Dwarf White, Williams' Matchless White. *Chicory*.—*Large-rooted, not that I can see inferior to Witloof, and like it (if there is any difference) occasionally having the "blanched" leaves splashed with brown like a spotted Cos Lettuce. Very desirable for winter salads. *Corn Salad*.—Broad-leaved Italian sown in August is a good addition to salads in autumn, winter, and spring. *Cress*.—Curled. *Mustard*.—White. *Endive*.—*Batavian Improved Round-leaved and Green Curled. *Lettuce*.—*Cabbage*, for summer: *All the Year Round and Neapolitan. For autumn sowing to stand winter: Stanstead Park. For frames: Early Paris Market, All the Year Round, and Commodore Nutt. *Cos*: Alexandra (a selected Paris White), *Hick's Hardy White. For autumn sowing: Brown Sugar-loaf (Bath), *Brown (Bath), black-seeded. For frames: Hick's Hardy White and Brown Sugarloaf.

Cucumber.—Duke of Edinburgh (Munro's), first-rate for frames; Tender and True, and *Telegraph. *Out-door*: Stockwood Ridge. *Melon*.—*Read's Scarlet-flesh. *Green-flesh*: *Easton Castle and Meredith's Hybrid Cashmers. *White-flesh*: *Cox's Golden Gem and Queen Emma.

Onion.—*Reading, White Spanish or Portugal, Danvers Yellow, Brown Globe, and *James's Keeping. For drawing young: White Lisbon. For pickling: Silver-skinned. For autumn sowing: Giant Rocca. *Leks*.—*Carentan and Mueselburgh. *Beet*.—*Dewar's Dwarf Red and Pine Apple Short-top. *Carrot*.—For forcing and warm border for early: French Forcing. For summer: Early Horn. Winter: *Red Surrey and James's Intermediate. *Turnip*.—*Early Snowball, White Stone or Six-weeks, the last with *Golden Ball for winter. *Parsnip*.—*Hollow-crowned Improved. *Radish*.—*French Breakfast, Scarlet Short-top. For winter: China Rose. For forcing: French Breakfast and Wood's Frame. *Rampion*.—A desirable winter accompaniment of salad; used like Radish. *Salsify* and *Scorzonera* both have roots that make a desirable dish.

Seakale for raising plants for forcing, to which I will again revert. *Asparagus*.—Conover's Colossal.

Tomato.—"Orangefield Dwarf, Hathaway's Excelsior; if a yellow be wanted Green Gage.

Vegetable Marrow.—Custard, *Long White.

In herbs are new Fern-leaved Parsley, Sweet Basil, Sweet Marjoram, Summer Savory, Anise, Angelica (a biennial), Borage, Caraway (biennial), Coriander, Dill, Pot Marigold, Purslane (green and golden), and others, continued solely by seed. Many may be raised from seed of the perennial class. I treat Sage and Thyme as biennials, sowing in spring, having plenty of green for cutting by autumn, and cut entirely for drying the following year and destroy.

Potatoes.—Early and for forcing: *Veitch's Improved Ash-leaf. *Second early*: Lapstone, or its improved form Yorkshire Hero, Rector of Woodstock. *Main crop*: *Snowflake, Walker's Early or *Prince Regent. *Rhubarb*.—*Johnson's St. Martin's, the finest forcing and early kind; *Monarch, a very large green kind, and late.

Those distinguished by a star are considered most desirable, and are intended to express the limit of kinds for general purposes.—G. ABBEY.

THE NEW ROSES OF 1876.

The Lyons Rose-growers, who send out annually novelties in Roses, announce this autumn the sale of many which have already obtained certificates of merit.

We shall commence with the gains of M. Antoine Levet of Route d'Heyrienx, Montplaisir, Lyons.

Mlle. Lazarine Poizeau, Tea.—Plant vigorous, very free-flowering. Flower medium size, full, fine form and handsome, and of a beautiful orange-yellow colour. This beautiful Rose was awarded a first prize at the special exhibition of Roses at Lyons in the month of June last. The same grower also sends out the following:—

Mme. Sophie Tropot, H.P.—Plant vigorous, almost without spines. Flower large, full, fine form like the old Cabbage Rose, and of a beautiful bright rose colour. Very effective.

Mme. Gabriel Fournier, H.P.—Plant vigorous, with straight branches. Flower very large, full, of fine form and dark rose colour. This beautiful plant of the highest merit has obtained a first prize at the exhibition of Roses at Lyons in June last.

Souvenir de Paul Dupuy.—Plant very vigorous. Flower very large, 6 inches in diameter, very full and of good form, dark velvety red. This, though not a Hybrid Perpetual, will take its place among the most beautiful varieties of hybrid Roses.

From the establishment of Madame Ducher of Lyons the following three Roses will make their appearance:—

Souvenir de George Sand, Tea.—Plant very vigorous, with short branches. Flower very large, full, of very fine form like that of a Tulip, yellow tinged with salmon; the reverse of the petals banded with lilac.

Triomphe de Milan, Tea.—Plant vigorous; branches short and straight. Flower large, full, of fine form, white with a deep yellow centre. This is a very beautiful and fine variety.

The stock of the beautiful Tea Rose *Mme. Welche*, named after the wife of the Prefect of Lyons, and which obtained a first prize in the month of June at the Rose exhibition at Lyons, has been sold to Mr. Henry Bennett of Salisbury, England. The sale of it will deprive us, no doubt, for some time of the pleasure of having this beautiful Rose in the nurseries of our French rosarians.

M. Ph. Rambeaux, Rue Neuve Charpenne, Lyons, informs us that he will send out the following two new Roses:—

M. Druet, H.P.—Tree very vigorous and very re-blooming, with elegant foliage. The flower of this Rose, raised from Duchesse de Cambacres, is of a globular form, recalling the colour of the old Cabbage Rose, with a very decided carmine centre.

Madame Pawort.—This is a new variety of the Bengal race, very vigorous, and very re-blooming. The flowers are very large, elegant, and very full, white with a pale rose centre.

The Horticultural Association of Lyons nominated at its sitting of the 15th October last a special committee, composed of Messrs. Bernaix, L. Charlin, and Guillet fils, to examine on the spot and to give its appreciation of a seedling Rose obtained by M. Joseph Schwartz, rosarian of Repas, Lyons. This new Rose, named *Comtesse Riza du Parc*, belongs to the section of *Tess*. Its branches are erect and branching. The young foliage is at first purple, then passes to a brilliant green. The buds are long, on stout footstalks. The flower is solitary, large, globular, full, of the colour of the China Rose with a coppery yellow ground. The plant is very vigorous,

very re-blooming, and flowers abundantly. This was raised from the *Tea Comtesse de la Barthe*.

The conclusion of the committee with regard to this new Rose is, that it is a plant of the first order, and one of the most beautiful obtained in the *Tea* section, meriting a prize of the highest class.

A beautiful new Rose has been obtained by M. Liabard which bears the name of *Emma Hall*. It was awarded a prize at the Lyons exhibition, and is in form like *La France*, with a beautiful deep rose colour. The plant has a fine habit, and it is said is very beautiful.

At present we know of but two new Roses obtained by the rosarians of Brie, and they will not be sent out till next May as grafted plants by M. Cochet, the rosarian of Snines. The first, which is a seedling from the beautiful Rose Charles Margottin, is a very vigorous plant with very straight branches and magnificent foliage. The flower, of good form, is very large, full, very deep red, and the reflex petals bright salmon. This beautiful new Rose, which we have seen and appreciated in the nurseries of the raiser, will bear the name of *Madame Bonnier*. The second, which will be sent out at the same time under the name of *Madame Roher*, is a magnificent plant raised from *Triomphe de l'Exposition*, extremely vigorous and very free-flowering. The flower is large, full, of good form, and its colour is of a beautiful bright rose with pale silvery reflex. This Rose was awarded a first prize at the Exhibition at Brie-Comte-Robert in the month of July last by a jury composed of Messrs. Levesque, Eugene Verdier, Hippolyte Jamin, &c.—(*Journal des Roses*.)

(To be continued.)

PLANTING EARLY POTATOES.

WHILE it is pleasant to see "A YOUNG AMATEUR" taking an interest in this important eculeut, and disposed also to give information as to its better cultivation, it is not desirable that erroneous teaching should be passed in silence.

The unsound portion of the advice on p. 33 is that suggesting the desirability of planting early kidney Potatoes 6 inches deep in January, instead of permitting the tubers to make some growth in a light place out of the ground preparatory to planting them.

I can conceive a position where kidney Potatoes, without having pushed their eyes, might be planted 6 inches deep in January—namely, in a bed of leaf soil at the front of a south wall. There they might grow, and possibly produce a crop; but in ordinary open positions, and in ordinary soil, and that "ordinary" being, as it so often is, more or less close and heavy, the probability is that not more than 50 per cent. of the sets would grow at all. Strong-growing round Potatoes would grow under that treatment, but the more tender early kidney would, many of them certainly, refuse to do so. Should the season prove very cold and wet failure must follow that mode of planting, and even under the influence of favourable weather the crop would not be more than half a success. I write on this subject after much experience, many trials, many failures, and some successes in Potato cultivation; and I would firmly impress on all never to plant early kidney Potatoes, and especially early in the season and deep in the ground, before the tubers have made some growth out of the ground.

Early planting is not productive of early produce. So convinced am I of that, that I should not hesitate, were I residing near a "A YOUNG AMATEUR," to enter into a mutual arrangement with him to this effect. We should both take our sets of early kidney Potatoes from the same stock. He should plant his share 6 inches deep on the first day of January, the sets then showing no signs of growth; and I would plant mine three months afterwards (the first day of April) on the same plot of ground, and I should confidently expect that my crop would be ready for digging before his, and also be more productive; in other words, my sets would grow more effectually out of the ground than his would in it. My reason for arriving at this conclusion is that I have tried the experiment repeatedly, and in every instance the results have been in favour of having encouraged a healthy growth of the sets before they were planted.

But while I should not hesitate to enter into a friendly competition under the conditions named, it does not follow that I in all cases advocate planting so late as April. I attach no importance to a mere date for the sowing or planting of any crop, and especially early Potatoes. A week sooner or later is of trifling import compared with the state of the

weather, the character of the ground, the condition of the sets, and the locality.

I am particularly acquainted with one garden where the best crops of early Potatoes are produced by planting well-prepared sets early in March, or even the last week in February if the weather is specially favourable. The soil of that garden is as light almost as leaf soil, and the rainfall of the locality is extremely slight. When placed in the ground thus early the sets have made growth (sprouts) at the least half an inch in length, robust, green, and studded with rootlets. So firmly are the sprouts affixed to the tubers that they may be turned out of one basket into another in the most careless anyhow manner, and not one sprout will be knocked off. That is the condition in which "seed" Potatoes should be at planting time. When planting early in light soil the sets are covered quite 4 inches deep. The object is to induce roots being formed some distance below the surface of the ground, and beyond the reach of the sun's rays, which throughout May and early June are generally so powerful as to seriously arrest the growth of the early Potatoes in this light and dry soil.

That is the practice the best suited for one garden, and now for the other. The gardens are not far apart, and both of them have been under my charge for several years. No. 1 (mentioned) is light and dry, No. 2 heavy and wet. Early and deep planting, which is the best for No. 1, is entirely unsuited to No. 2. In this garden the very last days of March or early in April, according to the state of the soil and the weather, is amply soon enough for planting. One of the best and earliest crops I ever had in this garden was from sets planted on April 12th. These tubers had each made growth an inch and more in length and proportionately stout; each "sprout" was studded with rootlets and was crowned with a cluster of leaflets. These were only just covered with soil, or say to the depth of a quarter to half an inch. They appeared above the surface just in time to escape the spring frosts, grew without check, and one of the finest crops of early Potatoes I ever reaped in was cleared off the ground on June 24th. A few similarly planted on the same date in the light soil of No. 1 garden did not produce nearly such a good crop, and some planted early and deep in the cold, strong, wet soil of No. 2 garden did not come up at all.

Such are the teachings of experience. The deductions derivable therefrom, the soundness of which have been proved by many and careful experiments, are, that careful preparation of the sets, by encouraging their robust growth in a light place, is imperative; that in light soil and dry districts early and rather deep planting is advisable; that in heavy soil and wet localities late and shallow planting is the most profitable, and that the state of the soil is of more importance in deciding the time for planting than the date of the calendar. I have given the practice best suited for two extreme cases, and no one need have any difficulty in "shaping his course" on the date given, determining his position and acting accordingly; but never—let me say it emphatically—never plant early kidney Potatoes 6 inches deep in January in cold, heavy, wet soil before the tubers show signs of growth.

A word may be added on the mode of planting. The soil, be it remembered, cannot be too clean and friable for this crop. It should be manured and dug deeply in the autumn, leaving it in ridges if it is at all of a heavy nature. When these ridges work down freely in the spring level them, and after the surface is again dry, dusty if possible, planting may be done. The ground should be again forked over, planting the Potatoes at the same time, the rows being not less than 2 feet apart. The drill or channel next the line should be made broad and level and of the proper depth for the sets. After these have been placed in the row it is excellent practice and highly worth the little trouble it entails to sprinkle over and around them the following compost in a dry state:—Wood ashes and old vegetable refuse in equal parts, to every two barrowfuls adding an 8-inch potful of superphosphate of lime, the same amount of soot, and half the quantity of salt. This spread half an inch (less or more) in the drills will greatly improve the value of the crop. In cold heavy soils the salt may be omitted. In such soils, and especially where the Potatoes do not turn out cleanly, it is first-rate practice to cover the sets (using also the ashes, &c.) with old, broken, half-decayed straw—old thatch answers admirably—previous to placing the soil over them. It is surprising how beneficial this is both in increasing the bulk of the crop and in contributing to the brightness and cleanliness of the tubers. The early Potato crop—the south-border crop, is so important as to be worthy of a little extra

care, and I know of no assistance that can be given more effectually in increasing the quantity and improving the quality of the produce than that of applying the side I have recommended at the time of planting the tubers. It is by the adoption of some such practice as is here detailed that prizes are won.

Let me conclude with a warning to young enthusiasts who intend "going in" in preparing the sets. I was an enthusiast once, and went in strong on the preparing point. Even that excellent practice can be carried too far, as I found to my cost. My early Potatoes, taken up at the end of June, were at once spread out thinly—preparing. The summer was long and hot. By the autumn they had made growth fully large enough for planting. They were continued in the light throughout the winter, and in March some of the "sprouts" were nearly as large as the parent tubers to which they clung—large, hard, barrel-shaped protuberances, each having a tuft of green leaves. I was extremely proud of them, but my pride sustained a fall. I planted them with extra care in the full consciousness of being rewarded with an extra crop, but—that terrible "but"—not one of them grew. Each gigantic sprout was transformed into a tuber, and was surrounded with a pealike progeny, while not a vestige of green appeared above ground. My employer had taken great interest in my pet tubers, and during the process of preparation I had represented to him (perhaps a little pompously) that I was "assisting Nature." When the failure was established he made me a present of the following remark:—"You have either assisted Nature to make a fool of herself, or she has made a fool of you." I have never felt comfortable when dwelling on that remark; and need I say that, except for the purpose of experiment, I have never since prepared my "seed" Potatoes so violently, so extremely? That failure taught me that extremes are dangerous, that moderation is the safe guide, that intelligence is necessary in all gardening matters, even in preparing Potatoes.—A NORTHERN GARDENER.

THE LADIES' DESIDERATUM WATERING-CAN.

The annexed can enables ladies to water the upper shelves in their greenhouses without the danger of upsetting flower-pots by having to step on the staging.

When it is required to fill the can with water it is lifted out of the wire frame into which it is hooked, and which frame is mounted on a stiff rod or bamboo some 4 or 5 feet long. The can thus being raised to the desired spot is tilted by means of the string.

This can may be obtained through the Rev. T. W. Huthwaite, Backwell, Bristol, by whom it was invented and patented.

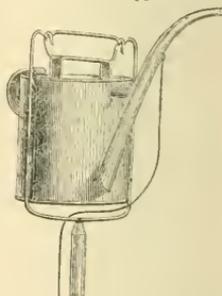


Fig. 5.

ROYAL HORTICULTURAL SOCIETY.

I HAVE received from a well-known amateur horticulturist of good position in Yorkshire some comments on my own and on Mr. Abbey's letter in the same number of the Journal, which perhaps you may like to have. "One more scrawl in the midst of my busy life to urge you to stick to your plan. I do not yet follow you on some secondary points, but in the main you are obviously right. Like me, and my father before me, hundreds of amateurs have hitherto ignored the Royal Horticultural Society, as we should ignore any other fashionable lounge society. Let those who enjoy pay. But offer to make me for a small sum Fellows, full members, or what you please to call us (but call us all alike) of a working scientific society, and we will gladly subscribe, though nineteen out of twenty of us will get nothing personally for our money. It will be regarded by us as an subscription for the promotion of horticulture.

"Mr. Abbey's schedule of payment are far too elaborate, and therefore too indefinite. I did think of the two classes—town members, £3 3s.; country members, £1 1s. But your plan seems best. And do not use clear of fashion; remove all temptation of this kind. I have sent out all the circulars you sent me, and will send more if you will let me have them. P.S.—I

am strongly with Mr. Abbey in desiring to affiliate country societies. [Hear, hear.—G. F. W.] I would make an associate class at 5s. per annum, or 10s. *hd.*, of working gardeners or working-class amateurs."—GEORGE F. WILSON.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 17TH.

THESE useful meetings appear to increase in popularity, and this, the first gathering of the year, was highly successful both as regards the character of the exhibits and the attendance of horticulturists. The tables of the Council-room were nearly filled with plants, and there were also some dishes of noteworthy fruit, especially a Pine Apple from Mr. Miles of High Wycombe—the identical fruit that was exhibited before the Committee on December 6th, 1876; so that altogether quite an attractive exhibition was provided.

FRUIT COMMITTEE.—Henry Webb, Esq., V.P., in the chair. Messrs. Lott & Hart, White Hill Nursery, Faversham, sent a seedling Apple for kitchen use, called Hart's Glory; but the Committee were of opinion that it did not possess merit superior to many other varieties in cultivation. Mr. Fowler, The Gardens, Harewood, sent fruit of the Charlesworth Tokay Grape from the old Vine at Harewood, which this year has ripened upwards of three hundred bunches. The flavour was delicious, and a letter of thanks was awarded to Mr. Fowler. Mr. Miles, The Gardens, Wycombe Abbey, exhibited bunches of new fruit of Black Hamburgh, being the second crop from the same Vine within twelve months. The colour was excellent, and the Grapes had a fine fresh flavour. A cultural commendation was awarded to Mr. Miles. Mr. Miles also exhibited a fruit of the same Pine which he submitted to the meeting seven weeks ago. Although it was not so sound as the former fruit, still, considering the period of seven weeks since it was cut, it was in excellent condition and of fine flavour. Its condition assured the Committee that it is one of the best, if not the best, keeping winter Pines; that it was named Lord Carrington and was awarded a first-class certificate. Dishes of *Heurde de Jonghe* and *Joséphine de Malines* Pears were sent from the garden at Chiswick. The former was in fine condition and of excellent flavour.

Mr. J. Hepper, gardener to C. O. Ledward, Esq., The Elms, Acton, exhibited three boxes of fine Mushrooms, to which a cultural commendation was awarded.

The death of Mr. Alfred Smece, F.R.S., who was for some years a member of this Committee, and whose great scientific knowledge was frequently of much service, was reported to the Committee, and a letter of condolence was agreed upon to be sent to Mrs. Smece and family expressive of the great loss which they and science had sustained by Mr. Smece's death.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, had a first-class certificate for *Lælia Dayii*, an intensely rich and beautiful flower with carmine sepals, a rich purple maroon lip and striped throat; second-class certificate for *Dendrobium Lindleyanum*, pinkish white sepals and yellow lip; and a botanical certificate for *Schlimia trifida*, an Orchid with a leaf resembling that of a Stanhopea, and white, bell-shaped, wax-like flowers of great substance and delicately perfumed. This distinct and remarkable plant was closely examined and much admired by many visitors. Excellent groups of plants were exhibited by Messrs. James Veitch & Sons, Royal Exotic Nursery, Chelsea; Mr. B. S. Williams, Victoria Nurseries, Holloway; Messrs. Charles Lee & Son, Royal Vineyard Nursery, Hammer-smith; and Mr. Ollerhead, gardener to Sir Henry W. Peck, Bart., M.P., Wimbledon House.

Messrs. Veitch's collection of plants was composed of Orchideæ—medium-sized plants extremely well flowered of Cattleya Trianae, very gorgeous; a great display of *Lycaste Skinnerii*, *Odontoglossum Alexandræ*, *O. Andersonii*, *O. triumphans*, *O. Rossi major*, *O. pulchellum*, *O. Hallii*, and the strikingly spotted *O. cirrhosum*. There were also *Cypripediums* *Sedeni*, *veixillarum*, *villosum*, *venustum* *parvium*; *Sophrontes grandiflora*, *Pleione humilis*, *Lælia albidia* and *anceps*; *Masdevallia polysetica* and *ignea*, and *Cologyne cristata*. Messrs. Veitch also staged excellent *Cyclamen*, superior pots of Lily of the Valley, a span of the intensely brilliant *Aphelandra aurantiaca* *Roezlii*, the pure and sweet *Toxicoplia spectabilis*, and a group of hybrid *Amaryllidæ*. A silver-gilt Davis medal was recommended to be given for this collection.

Mr. Williams's group comprised ornamental-foliaged plants, Palms, *Dracæas*, &c., well-berried *Solanums*, and highly attractive *Orchidæ*, including *Cypripedium* *insigne*, *C. venustum*, *C. Harrisonianum*, and the beautiful *C. Dayanum*—a splendid plant in splendid condition—*Odontoglossums* *luteo-purpureum*, *Pectostori*, *cordatum*, *Alexandræ*, &c.; *Zygopetalum crinitum*, *Masdevallia*, *Lælia*, and *Goodyera discolor*. Mr. Williams also staged half a dozen plants of *Primula sinensis* Queen of Whites, the flowers being very pure, of great substance, well fringed,

and exceeding 2 inches in diameter. A bronze Davis medal was recommended to be given for this group.

Messrs. Lee's collection, which was very extensive, comprised many choice *Conifers*, *Cupressus*, *Retinosporas*, and *Junipers*; also *Ligustrums*, *Enonymæes*, *Hollies*, and a large and varied assortment of stove and greenhouse decorative plants, and a vote of thanks was deservedly awarded.

Sir Henry Peck's collection was attractively arranged, and the plants were in excellent condition. The groundwork was formed of the following *Orchids* were springing in charming contrast:—*Calanthe Veitchii*, *Lycaste Skinnerii*, *Odontoglossum pulchellum*, *O. Bietonenæ*, *O. Alexandræ*, *O. Roezlii*, *Cypripedium niveum*, *C. insigne*, *C. venustum*, *C. Sedeni*, *Oncidium cheiroporum*, *O. Weltoni*, *Cattleya Trianae*, *Phalaenopsis grandiflora*, *Cymbidium ensifolium* (sweet-scented), *Saccolabium violaceum*, *Lælia anceps*, *L. albidia*, and *Cologyne cristata*. Mr. Ollerhead also exhibited in a separate group *Todea superba*, *Coccos Weddelliana*, and *Crotoms*. A bronze Davis medal was recommended for the collection.

A large and excellent collection of dried Ferns and leaves was exhibited by Mr. Howard, nurseryman, Balham Hill, for which a silver Davis medal was recommended to be given. The colours of the leaves had been exceedingly well preserved, and the Ferns were almost as fresh-looking as if growing, although some of them had been cut in 1875.

Mr. Dean, Ranelagh Road, Ealing, exhibited a collection of *Victoria Regina* and *Neapolitan* Violets, also seedling *Primroses*, and a vote of thanks was awarded.

From the Society's gardens came flowering sprays of *Chimonanthus grandiflorus*, the *Glastonbury Thorn*, *Lonicera Standishii*, and *L. fragrantissima*.

SOIL FOR VINE BORDERS.

We recently noticed the superior nature of some Vine shoots which had been sent to us by Mr. Wipf, gardener to N. Clayton, Esq., Lincoln. That wood was correctly described as being nearly as hard as oak, and almost destitute of pith. The following is in reply to an inquiry as to the nature of the soil which had assisted in producing that wood, and is one more proof of what may be done in successful Vine culture with good management and proper additions to ordinary soil, without the much-coveted rich turfy loam:—

"The greater portion of the soil was taken from the site of the Vine border—a black adhesive compound destitute of fibre, lying on the limestone; the rest of the soil I procured from the neighbourhood, which was of a light sandy nature. I coveted what is termed strong loam, but such could not be procured except from a long distance and at prodigious cost. I therefore made the best I could out of materials on hand, and mixed freely with the soil bones, charcoal, wood ashes, and a little manure. I elevated the border 2 feet above the ground level in spite of light soil and little rainfall, trusting to an unlimited water supply. Twice during the season I mulched the border with some strong slaughter-house manure, which prevented the border from being parched-up, but at the same time warming the soil above the ground level to a mild hotbed temperature. Evening was chosen for watering the border, the water then being much warmer from having been in the pipes all day, the latter laying very close to the surface of the ground. The roots have travelled 5 feet into the outer border, and are within a few inches of the surface; no manure water was applied. The subsoil of the borders was of a loose rubble limestone formation. I had it all taken out to the depth of 2 feet and passed through a coarse riddle (3 inches); the stones were then replaced, the largest at the bottom and the smaller on the others evenly levelled down. Below that rubble there lies a loose limestone bed to the depth of 8 to 10 feet, terminating below with a bed of ironstone full of clefts and crevices, therefore ample and efficient drainage for 10 feet of rain per annum is secured. Inside treatment as to moisture and ventilation was carefully attended to, a little air having always been left on both day and night.—ALBERT WIPF."

NOTES AND GLEANINGS.

THE Mr. Sage referred to by Mr. Luckhurst in his appeal of last week is Mr. THOMAS SAGE, who died on the 23rd nit. at Hammersmith at the early age of thirty-three years. He commenced his gardening experience under Mr. Dornay in the nurseries of the Messrs. Veitch at Exeter, and subsequently was foreman at Gopnal Hall (Earl Howe's) and at Gunners-bury (Baron Rothschild's), eventually becoming gardener to

Sir Edward Dering, Bart., at Surrenden, and when there was an active member of the Committee of the Ashford Horticultural Society. Mr. Sage was an earnest and successful gardener and a worthy man.

At the meeting of the ROYAL HORTICULTURAL SOCIETY held yesterday, Lord Alfred S. Cholchill announced that the next meetings of the Fruit and Floral Committees, on the 14th February, will be held in the conservatory, and that a military band will perform during the afternoon.

The South-Eastern Railway Company conveyed on the 10th inst. from London *via* Folkestone and Boulogne, *en route* for Milan, 948 cases of SILKWORKS' EGGS, weighing 26 tons 11 cwt. This consignment was from Japan.

The *Germantown Telegraph* has published the following relative to the value of SALT AND SOOT AS MANURES:—Mr. Cartwright received from the Board of Agriculture the honorary reward of a gold medal for a valuable set of experiments made by him to ascertain the value of salt in agriculture. Of the soil he used nearly three-fourths was sand, the remainder consisted of calcareous and vegetable matter, with alumina and a small quantity of oxide of iron. Having tried all the usual manures alone and differently combined, he found of mixed manures that salt and soot were superior to all others. The produce upon which these experiments were made was Potatoes, and it was observed that wherever salt was used this root was free from scabiness, with which it is commonly infected. One peck of soot and a quarter of a peck of salt were used to a bed 1 yard wide and 40 yards long." Our correspondent, "A NORTHERN GARDENER," in another column speaks highly of the value of salt and soot as manures for Potatoes, and we know him to be an experienced and successful cultivator.

ALTHOUGH the COMMON HOLLY has not produced many berries in the last year, the variegated-leaved varieties have been prolific, and a correspondent, Mr. J. Hardie, reports the same observation from Scotland.

PUBLIC attention is almost constantly being directed to the advisability of planting TREES in TOWNS, and every week the matter is discussed by parochial boards and vestries. On every consideration the planting of trees in such places is desirable, and experience has taught that the best of all trees for the purpose are Planes. Other kinds of trees will exist in smoky places, but not flourish with the same vigour as Planes. A point in favour of these trees, and which weighs heavily with continental authorities, is that Planes retain their foliage until late in the autumn, and then cast it all at once immediately after the first smart frost, and thus the interminal litter caused by the falling of the leaves of other trees over a long period, and the consequent and frequent sweepings necessary for cleanliness, is avoided. Planes, in short, are the healthiest, the handsomest, and the cleanest of all "town trees." In parks and suburban gardens other trees thrive more or less satisfactorily, Limes, Elms, Chestnuts, Thorns, Acacias, Laburnums, and the Tree of Heaven (*Ailantus glandulosus*), but for avenues in streets no trees are comparable to Planes.

ALLOTMENT GARDENS FOR THE POOR.—Mr. J. Wright writes to the *Times* from Springwell, Saffron Walden:—"In a parish in which I was born, and which formed a part of the large estate of the late Lord Maynard in Essex, his lordship required his tenants to allow every cottager to occupy from 10 to 40 poles of land near to his dwelling, and at the same rent per acre as that paid by the farmers; and many years back, and during his lordship's life, I heard blessings invoked upon him for having filled the belly of many a poor man's child which otherwise would have gone empty; and, as the same system is continued by the trustees of this estate, I should be glad to see the labourers, by the work of their hands, raise some lasting memorial to the memory of so benevolent a nobleman. In the parish of Willesden, in which I have resided for the last thirty-five years, I established the present system of allotment gardens, of which there are now about sixty, and in the summer months anyone may see in Pound Lane, in a field granted by Mr. Prout of Neasden, the working of the system, and the highly-prized productions of the tenants. I have lived to see the fallacy of Mr. Malthus's arguments, for there is no redundancy of population; but, on the contrary, every able-bodied man can find employment at considerably increased wages, and the Union houses are no longer needed, and ought not to exist except as asylums for the aged and hospitals for the afflicted."

WE regret to hear of the death, at the age of 53, of Mr. ALFRED SREE, F.R.S., which occurred on Thursday at his residence, 7, Finsbury-circus. Mr. Sree was born in the City, where his father was chief cashier in the Bank of England, and he had resided in the City all his days. He received his early professional education at the Aldersgate School of Medicine, became a member of the Royal College of Surgeons in 1840, and a Fellow in 1855. He held the office of surgeon to the Bank of England, being the first appointed. Mr. Sree was well known for his practical knowledge of electricity, and had given his name to a galvanic battery, being besides the author of many practical works connected with electricity and professional subjects. He was the inventor of the present mode of printing Bank of England notes. His best known works are: "Electro-Metallurgy," "Sources of Physical Science," "The Potato Plant; its Uses and Properties," "Principles of the Human Mind," "Instinct and Reason," "Lectures on Electro-Metallurgy" delivered at the Bank of England, and "The Process of Thought Adapted to Words and Languages." One of his latest works was "My Garden," in which he minutely describes his garden at Croydon. Mr. Sree was a director of the Gresham Life Office, the Protector and Accident Assurance Companies, and the East London Railway, an active member of several institutions, and he was for many years a member of the Scientific and Fruit Committees of the Royal Horticultural Society. He was also for seven years a Member of Council of the Society. The annual flower shows in the City have lost in him an enlightened supporter.

FASCIAED BRANCHES.—In reference to a broadly flattened branch of a Sweet Potato, Mr. Meehan, at the Philadelphia Academy of Sciences, said these branches were found on numerous plants, and there was no reason why all plants may not be found to produce them. They were species of fasciations which took different forms at times. In trees they often appear as "crow's nests." The old theory referred them to over-luxuriance; but in a paper published in the *Troy Proceedings of the American Association* it was shown to be just the reverse. In union there is strength, in vegetable as in other bodies. Any tendency to a multiplicity of small shoots on a tree instead of making a few large branches, all other things being equal, is an evidence of lower vitality. And this was proved by these fasciations. In severe winters fasciated branches were the first to die; often they were the only branches that were destroyed. Again, it had been shown in his papers before the American Association and before the Academy of Natural Sciences of Philadelphia, that only when a flowering portion of a plant was in the best conditions to maintain its hold on life, in other words in the highest conditions of vitality, did it produce pistils or female flowers. With a lowered or depreciated vitality the male organs of the flower or male conditions were favoured, and it was a singular fact that whenever these fasciations flowered, the female organs were nearly always abortive, and stamens and petals increased at their expense. These were some of the facts which had proved the old notion that over-luxuriance in the sense of high vital power had nothing to do with fasciations, but rather the reverse. This was as near to the full explanation as science could get as yet.

In the month of July last says, the "Journal des Roses," M. Paul Brunaud of Saintes (Charente Inferieure), presented to a meeting of the Central Horticultural Society of France the description of a remarkable monstrosity of the Provins Rose. This Rose is prolific, and the shoot which proceeds from the centre of the flower has, one following the other, two other flowers more or less rudimentary, above which is a small cluster of leaves. Its calyx is developed into normal leaves, of which four have five leaflets and the fifth three. This is one of the freaks of nature which are sometimes met with where Roses are grown to any great extent.

CYTISUS RACEMOSUS OUT OF DOORS.

This useful plant is generally found growing in pots in greenhouses, and is considered a great acquisition to the conservatory at this season of the year. To me it is a novelty to see this useful greenhouse plant grown to perfection in the open air. We have several specimens growing here, two of which have stood unprotected since the year 1869, and have grown to the height of 6 feet and measure 12 feet round. They are now blooming freely and are likely to continue so for a long time. Those plants are quite hardy and always bloom twice a-year. In April the old wood that has flowered is removed

with the clipping shears, the plants then start into rapid growth and flower again in July. My reason for writing about the *Cytisus racemosus* is that its hardiness is not generally known. Any person seeing it in bloom and healthy as it is here cannot fail to say it well deserves a prominent place in every shrubbery.—A. CAMPBELL, *The Gardens, Muckross Abbey, Killarney.*

NATIONAL ROSE SOCIETY.

THE lovers of the queen of flowers will be glad to hear that matters are progressing satisfactorily with regard to the new Society founded in her honour. An informal meeting of the Committee, at least of those members resident in and near London, has been held at the Horticultural Club, holding the same relationship to the general meeting of the Committee that the "pourparlers" at Constantinople did to the more important meetings now being held—i.e., plans were brought forward to be submitted to the general meeting of the Committee which will be held on the first Wednesday in February. Amongst other important matters a schedule for the first Show of the Society on July 4th was prepared to be submitted to the members of the Committee, so that when they meet they will have had time to digest it and make suggestions for alterations and improvements, when it will be printed and circulated. I may state that the prizes suggested are very liberal, and amount in the aggregate to upwards of £230, and that this will be for cut Roses alone. No pot Roses or vases of flowers, or any miscellaneous subjects, are recommended. It was also suggested that each member of the Society should have two admissions for the Exhibition to admit them an hour before the general public. To all real lovers of the Rose this will be a real boon, as it will give them an opportunity of quietly looking over the stands exhibited.

It was also proposed that in the various localities where the Rose is in favour someone should be requested to act as local Secretary, for the purpose of advancing the interests of the Society, securing members, &c. Several well-known amateurs have already signified their readiness to act in this capacity, and I have no doubt that I shall shortly be able to announce a goodly number who have thus consented to act. So far, then, all is working well; and although the time of year is unfavourable and the season depressing, yet I have every confidence that the work so auspiciously begun will be effectively carried out.

I should add that it is one wish of the Committee when they publish their schedule to announce on it the date of the various Rose shows throughout the kingdom, and if possible to prevent that clashing of interests which has been found so detrimental; and communications are now being opened with the Secretaries of the various societies to ask their kind aid in this matter.—D., *Deal.*

BERRIED SOLANUMS FOR WINTER DECORATION.

Few plants are more easily grown and at the same time more useful for the winter decoration of the greenhouse than the above. I will detail my practice in growing them, which has hitherto given very satisfactory results.

If the object is to have good plants in small pots I find it best to sow the seed about the middle of November in gentle heat. The young seedlings will be ready to prick-off in thumb pots the first week in January. In six or eight weeks they will require a shift into 4-inch pots, still keeping them in a warm pit or frame. By the end of April or early in May they should have another shift into pots a size or two larger. This with me is their final one. At the end of May, or when all danger of late frost is over, I plunge them in ashes out of doors where they are sheltered from high winds but fully exposed to the sun. When they fill their pots with roots they should have frequent waterings with manure water, and should remain plunged till they have set and swelled-off their fruit, which will be about the middle or end of September. I find the November sowing always gives more satisfactory results than spring sowing. With regard to older and larger plants I cut them well back in April, and at the end of May prepare a bed of free rich soil about 12 inches deep on a hard bottom. The plants are then turned out of their pots and the old balls considerably reduced, and planted out about 2 feet apart each way. They are taken up and potted in as small pots as possible towards the end of September. It is a good plan to cut

round the balls with a spade or edging-cutter two or three weeks previous to this. After potting keeping them in a close frame, shaded from hot sun and syringed overhead once or twice a-day for a fortnight, they will then bear free exposure to air and light. The berries will speedily change colour, and in the dull months of winter amply repay the little trouble and attention required to grow them.—J. E.

[The sprays sent (*Solanum capsicastrum*) were loaded with highly-coloured berries and strikingly handsome. We never before saw any so densely fruited.—Eus.]

VENN'S BLACK MUSCAT AND DUKE OF BUCLEUCH GRAPES.

It is somewhat surprising to find Venn's Muscat Grape so condemned by Mr. Wildemith and spoken so highly of by other good growers. What can be learned by these conflicting statements? Does the situation suit Mr. Wildemith's Vine, or in what way can the early shrivelling be accounted for? I have fruited Venn's Black Muscat two seasons, and find its produce a grand Grape of easy cultivation. We had it ripe in July, and kept a specimen bunch till November quite fresh and plump and of delicious flavour. I do not remember anyone recommending it as a late Grape, but for an early or midseason Grape of easy cultivation nothing can surpass it. It is a good grower, profuse bearer, free setter, ripening as early as a Black Hamburg, with a rich Muscat flavour.

The Duke of Buccleuch has fruited here two seasons, and has proved very satisfactory under precisely the same treatment as the above—that is to say, the Vines have had no special treatment or coddling whatever. The Duke of Buccleuch is a little earlier than Venn's Muscat, and the fruit may not keep so long; however, we kept a bunch two months in fine condition, and showed it at the Dundee International Exhibition, where it was much admired.

I should advise "ASPIRING AMATEUR" to give these Vines a fair trial, and if he has room to plant Black Hamburg and Foster's White Seedling as supernumeraries.—J. H. GOODACRE, *Elvaston.*

FLORISTS' FLOWERS IN THE SOUTH.

THE harp of "D." of Deal, as illustrated in his retrospect in your last week's issue, seems yet to be "upon the willows," and somewhat out of tune. He says he has "been twitted for saying florists' flowers are at a discount in the south," but whilst he "cheerfully acknowledges the attempts that are being made to revive an interest in them he is compelled to abide by his view."

Will you permit me to say, that instead of seeing in the work going forward attempts to revive an interest in florists' flowers, I look upon that work as an incontrovertible proof of the vital living interest existing in them? and I assert that logically no other interpretation is possible. Further, "D., *Deal*," tell us he has "been accused of disloyalty to the cause for having said this," and adds, "to all who know the deep and hearty interest I have taken in florists' flowers all my life this will seem simply an absurdity."

Well, I know something of this deep and hearty interest of which "D., *Deal*," speaks, and I ask you to allow me to propound to him the following question:—Has not this deep and hearty interest in the case of the Auricula, his favourite flower, brought him in reference to its classification, mode of showing, and properties into antagonism with the late Rev. George Jeans and the Rev. J. Bramhall—in Roses with Messrs. Rivers and William Paul—and in Carnations and Picoetes with Mr. Dodwell? The names quoted are those of gentlemen of weight and authority in connection with the flowers named; and I shall but record the simple fact, that in the conflict of opinion in each case, "D." of Deal won no followers, but remained, as he seems yet perversely resolved to remain, the sole exponent of his very singular and paradoxical views.—Z.

ARAUCARIA IMBRICATA CONING.

IN No. 824, page 27, a correspondent says, "Can you inform me if it is usual for the above tree to bear seed to perfection in this country?" On reading the above I thought it might not be uninteresting to say that this ornamental and truly beautiful tree coned freely in 1873 in the rectory gardens of the Rev. Henry Bourchier Wrey, Tawstock, North Devon. Not having seen Mr. Wrey's trees since that date, I cannot answer

for their coning sines. As far as I recollect there are three of these trees planted in a triangular form on a slightly elevated mound which have coned and ripened seeds for several successive years previous to the date above mentioned. I believe Mr. Wrey has raised several plants from the seed. In 1874 the reverend gentleman gave seeds to many of his friends and acquaintances, with directions for their successful growth.

—J. COLE McARDELL.

SOME SPECIES OF PRIMULA.—No. 3.

FOREMOST among the genera, companions of my early days—genera now neglected—I place Primula. Where now can the species *amena*, *verticillata*, *Pallasii*, *villosa*, *farinosa*, *nivalis*, *marginata*, and others be found in England? There are a score of species, many of them formerly cultivated in our gardens, yet how rarely now do we meet with any but varieties of the Primrose, *Polyanthus*, and *Auricula*.

We have published notes on two species, and we purpose affording similar justices to a few more.

PRIMULA VILLOSA, OR MOUNTAIN PRIMULA.—Mr. Curtis, in the first volume of "The Botanical Magazine," published in 1787, says, "This plant has been introduced pretty generally into the nursery gardens in the neighbourhood of London within these few years. Mr. Salisbury informs me that a variety with white flowers, brought originally from the Alps of Switzerland, has for many years been cultivated in a garden in Yorkshire.

"It is not noticed by Linnaeus. Professor Jacquin, in his "Flora Austrica," has figured and described a *Primula*, which, though not agreeing so minutely as could be wished with the one we have figured, is nevertheless considered by some of the first botanists in this country as the same species. He gives it the name of *villosa*, which we adopt, though with us it is so slightly villous as scarcely to deserve that epithet.

"It varies in the brilliancy of its colour, flowers in April, and will succeed with the method of culture recommended for the round-leaved *Cyclamen*."

The leaves are fleshy, slightly hairy, rhomboid, toothed on both sides towards the end. Scape an inch long, bearing one or two flowers; these are purple, segments heart-shaped, eye pale. Calyx not mealy, hairy, bell-shaped, half the length of the tube.

It is a native of the Swiss and Carinthian Mountains.

KEEPING LATE GRAPES.

ARE your correspondents, who in previous numbers attribute the cracking of the berries of Grapes to excess of moisture at the roots and to a deficiency of foliage to appropriate the excess of moisture, correct in their assumptions? I think not entirely. I have not time at present to enter fully into the

subject, but it may suffice for all practical purposes to illustrate what I mean by one or two instances of my experience in keeping late Grapes. When with Mr. Brunless of Argyle Lodge, Wimbledon, he suggested as a means for preventing the cracking of the berries the thinning-out of the lateral branchlets, and by degrees the whole of the wood of the current year's growth nearly close to the bunches. I acted on the suggestion and found the fruit keep in excellent order, and have practised the same thinning-out by degrees of superfluous wood and foliage ever since. The Grapes this year are keeping first-rate, notwithstanding the borders are saturated with wet. We have Black Hamburgs perfect in outline of bunch still; in fact, as many as will see us into February.

The only Grapes which have not kept satisfactorily this season were some Black Hamburgs ripened in August in a span-roof house and planted in the pit inside the house. The roof is nearly decayed, and the rain kept a continual state of dampness in the house in October and November, so that we were glad to cut the fruit. Strange to say, on giving the border a winter dressing lately it was found in a rather dry state, so that moisture in excess at the roots could not militate against good keeping in this instance.

I think "A NORTHERN GARDENER" hits the real cause of the mischief. Until a few weeks back—in fact, till the foliage was all but entirely off the vines, as there are still a few leaves hanging, we kept as nearly as possible a temperature of 50° and never attempted to dry up moisture on fine days, as there is as much harm done this way as any other. A temperature of 45° is the lowest I like to see the glasses registering now. What with the requirements of a family to supply during winter and spring, and a large flower garden to stock in summer, we require all our glass for storing and growing plants as well as fruit, so that the Grapes here do not receive what might be termed the best accommodation. No kind of fruit will keep well when the temperature fluctuates much, nor when there are extremes of dryness and moisture, and Grapes do not require much moisture in the atmosphere to induce their decay.—R. P. B.



Fig. 6.—PRIMULA VILLOSA.

BARHAM COURT.

THE SEAT OF ROGER LEIGH, Esq.

THERE are several places in England named Barham, the name signifying in modern English a fenced residence—that is, a house in an enclosure. The word Court added means that it was the enclosed residence of the feudal lord. Anciently it was spelled Bereham, but this had a similar signification, for *Ber* is the Saxon for a hedge. Barham Court is a manor, and in the time of Henry II. had for its lord the Archbishop of Canterbury, of whom it was held by Sir Randal Fitzurse, one of the assassins of Archbishop Becket in 1170. He fled, and one of his relations took possession of the manor and assumed from it the name of Berham. It remained in the possession

of the family until the reign of James I., when it was alienated to the Rev. Charles Fotherby, Archdeacon of Canterbury, from one of whose descendants it passed to Sir Edward Dering by marriage. It was afterwards the seat of Lord Kingsdown, and now belongs to Roger Leigh, Esq.

Barham Court is thus an "old place." Its mansion is old and plain, its trees ancient and gigantic. It is also a "new place." Former proprietors have done their part in the picturesque planting of "ancestral trees," and the present owner has done his part in making a modern garden.

Few places in its district are more worthy of a "gardening visit" during the summer season than this. The drive from Maidstone to Barham is a pleasant drive of four miles. It is through a district of Cherry orchards and Hop plantations, which on the left-hand side of the road are conspicuous over a great extent of landscape. On the right-hand side the ground is higher, and on one of the highest parts of the ridge

Barham Court is situated. The view from the front of the mansion is commanding and beautiful, embracing a wide-stretching undulating vale of great fertility and well wooded. The mansion is not "embowered in trees" obstructing the view, but the trees have been judiciously planted or thinned so as to show to the greatest advantage their own beauty without veiling the natural attractions of the surrounding district.

The lawn is extensive and open, the trees being in isolated groups—a rugged fringe, as it were, to the doormans, with vistas through which many "delicious peeps" are obtained. The trees are Elms, Oaks, Beeches, a few Pinusses, and very noticeable a fine Magnolia and Cedar of Lebanon, the stem of the latter girthing 24 feet. Rhododendrons appear to flourish well, and have been freely planted in the shrubberies. On this large lawn and associated with these noble trees flowers are sparsely (and it must be admitted wisely), represented. Parallel with the terrace walk on the south side of the mansion are a



Fig. 7.—BARHAM COURT.

series of chain beds, and between the walk and the building is a border where in the summer "carpet bedding" is carried out. This is the extent of the lawn flower garden, small yet sufficient.

Adjoining the mansion is a conservatory, and in connection with this structure is a commodious exotic plant stove. These at the time of my visit were *en déshabille*, both plants and houses undergoing a thorough cleansing, and the prominent feature at the moment was soap and water. The plants, however, it was easy to see, although huddled together for the convenience of the workmen, were both extensive in variety and excellent in condition.

At some distance from the mansion, at the skirt of the lawn and hidden from it, is what may be termed the flower garden proper. It is small—an ornamented dell, reached by winding walks, and it comes suddenly into view as a "pleasant surprise." This is a subtropical garden—a miniature Battersea Park. There are the raised mounds, the sheltered hollows, the informal beds, the artificial rocks, and the irregular pool as at Battersea. Indeed it seemed as if the best part of Battersea was reflected at Barham. The subtropical plants at both places were almost exactly similar, and were similarly disposed. It may be true, as Mr. Abbey has said, that Lichens and other forms of vegetation will not cling to artificial rocks; it may be equally true, as Mr. Peach has suggested, that those

rocks are but vain mimics of the "bones of nature;" but it is also true that when tastefully constructed and appropriately placed—not obtrusively prominent, but partially hidden and in subservience to other objects of decoration, that these "rocks" with the water near them, and the aquatic plants flourishing about them, enhance considerably the beauty of a "garden scene." The rocks at Barham have been tastefully arranged and answer their purpose admirably. In such places the object is not to convey a lesson on geology, but to complete a picture of varied interest and attractiveness. The "rocks" in question were "made," I think, by Mr. Pulham. They do either that manufacturer or someone else considerable credit. Such is an outline—a "general idea" of the pleasure-ground character of Barham Court, and I will now glance—it can only be a mere glance—of what was to me, as it must be to all gardeners, the far more important department of fruit-growing.

I am indebted to Mr. Record for the disappointment of a visit to this place—a disappointment, however, not of a kind that one often hears expressed after a visit of this nature. My disappointment did not arise from the fact of there being nothing to see worthy of notice, but because there was so much to see so striking and intrinsically good, and so little time for seeing it. Had I been aware of being within an hour's drive of a fruit garden so complete and novel I should have disturbed the early morning slumbers of my host, and instead

of having a "wild rush" through these fruit gardens examining nothing, I would have given that attention to them that they well merit. I have used the plural, "gardens." It is correct, for there is not simply one walled enclosure but several, devoted almost entirely to the cultivation of hardy fruits, especially Apples and Pears. There are acres of ground, miles of wire, and thousands of trees in these six large walled gardens, which I think no member of "the craft" could see without admiring. He may not admire the system adopted, for that depends on taste, and almost everyone has his fancies and prejudices; but he cannot, I think, help admitting that the system (whether he agrees with it or not) is here well and extensively carried out, and it is impossible that he can ignore the extraordinary high quality of the fruit which that system and good management produce. There are those who are powerful in their advocacy of growing fruit on the natural system; they would have no pruning, no pinching, no training. Others consider no plan equal to the bush or pyramid system, and regard both root-pruning and summer-pinching as indispensable. Others, again, are powerfully predisposed in favour of espaliers, and believe that by no other mode of culture can so much superior fruit be obtained off a given extent of ground as by training the trees to wire trellises. It is not difficult for the advocates of the respective systems to adduce testimony that each plan is worthy of adoption, and has, indeed, proved satisfactory. The fact is, that any, or all, of the plans named are good when ably carried out, and they can only be justly denounced when the systems have been or are abused.

The advocates of the wiring or espalier system—the French system—can point to Barham for evidence of its value, that being the mode which is there extensively and almost exclusively adopted. All the walls are whitewashed, and all the trees are trained as diagonal cordons, palmette verriers, or some other "Frenchified" mode of training, but the diagonals preponderate. The quarters of the gardens are devoted to espaliers, long trellises of wire being erected, running from north to south, each of the tallest being 10 feet high, with about the same distance between the trellises. These are all connected together with cross wires at regular intervals, these cross wires being fastened to the tops of the walls. These wires will no doubt be some day covered with "cordons," and will contribute much to the appearance of the gardens, and they at the same time impart stability to the whole wire-work arrangements. Some of the trellises are double, and have cordons planted on both sides, the trellises being a foot or more apart. This plan is much liked as economising space, the trees bearing as well as on the single trellises. There are other trellises 6 feet high, most of them, also the walls, being occupied with Pears. Near the sides of the walks are double and single horizontal cordons of Apples, which at the time of my visit were bearing prodigious crops of splendid fruit. There are also bush trees more or less miniature, which were bearing fruit not "miniature" but magnificent.

The Pears are fast reaching the tops of the walls and trellises, and were bearing some of the finest, if not the very finest, fruit I ever saw growing. Amongst the autumn Pears which appeared to be grown in quantity were *Bœurré Hardy*, *Louise Bonne de Jersey*, *Williams' Non Chrétien*, *Bœurré d'Amanlis*, *Doyenné du Comice*, *Bœurré de l'Assomption*, *Bœurré Superfin*, &c. Later sorts—*Pitmaston Duchesse*, *Passe Crassane*, *Marie Benoist*, *Easter Bœurré*, *Winter Nelis*, *Joséphine de Malines*, *Doyenné d'Alençon*, *Olivier de Serres*, *Prince Napoleon*, and others.

Amongst the most noticeable of the Apples were the horizontal cordons of *Api Rouge* or *Lady Apple*, veritable lines of beauty, and splendid crops of remarkable fruit of the *Winter Calville* and *Red Calville*. The finest of the *Winter Calvilles* (*Calville Blanche d'Hiver*) were produced on low cordons trained near the front of the south wall. Other sorts exceptionally fine were *Reinette du Canada*, *Reinette de Canx*, *Reinette d'Espagne*, *Cox's Pomona*, *Cox's Orange Pippin*, *Ribston Pippin*, *Belle Joséphine*, *Belle Dubois*, *Beauty of Kent*, *Cornish Gilliflower*. These are only a few impressed on my memory, for all the best kinds in cultivation are included in the collection. A sufficient proof of the high quality of the fruit produced in this garden was afforded at the autumn show at the Royal Horticultural Society, when a gold medal was awarded to Mr. Haycock, Mr. Leigh's gardener, for a collection of Pears and Apples, which for colour, size, and general high quality has been rarely equalled at any exhibition of English-grown fruit.

There is also a considerable extent of glass. Besides the

conservatory and plant stove referred to there is a vinery about 80 feet long in three compartments, Peach houses 100 feet long, Pine pit of a similar length, a span-roofed plant house also 100 feet in length, Cucumber and Melon pits 50 feet long, and an excellent orchard house 70 feet by 22 feet. The Vines were thinly trained, moderately cropped, and the Grapes were well coloured and of good quality. Peaches were gathered except *Salwey*, and the crop of this was highly superior. Figs in pots were bearing excellent crops. Melons were cut, but a fine lot of fruit of *A. F. Barron* were unused, this proving to be a good keeping variety. Pines were of medium size. Decorative plants in good order, and fruit trees in pots were numerous and excellent. Many of the glass structures were of comparative recent erection, and all were in capital working order.

The vegetable crops evidently received the same care that was bestowed on the fruit trees, the regularity and cleanliness of the several crops being very noticeable. *Asparagus* is largely grown, the plants being in hollows, with their tops supported with stakes, and the "grass" was robust and luxuriant. Tomatoes were "a sight." Stont posts had been fixed in the ground, and to these supports boards were nailed, forming a "wooden wall" 3 to 4 feet high; this was limewashed, and on the south side were trained the Tomatoes. The crop was prodigious, and certainly of greater value than the cost of the fence, while this was sufficiently substantial to last for some years.

The gardens at Barham Court are eminently worthy of inspection during the late summer months, before the fruit crops are gathered. At the period of my flying visit their cleanliness was remarkable—the white walls, the neatly-trained trees, the full vegetable crops, and the absence of weeds affording evidence that no crop was neglected in favour of another more highly prized department. The owner of this excellent garden is clearly a liberal patron of horticulture, and it is equally clear that the gardener is as skilful and attentive as the owner is earnest and liberal.—J. W.

THE TREE OR MULTIPLYING ONION.

I HAD a few given to me about four years since. Last year I had nearly half a bushel. I set in March last year 24 square feet of ground with bulbs, 6 inches apart. When I took them up in October last they quite surprised me, for at some of the roots there were three or four good-sized Onions. Besides, on the stem, about a foot from the ground, was a bunch of three or four more Onions, and above them another bunch or cluster of eight or nine smaller bulbs, about the size for pickling, and in a few instances even another cluster about the size of horse beans. We have cooked some several times, and think them milder than most Onions. They have kept well till now, but the weather being so mild they begin to grow. They are very hardy. I have had odd bulbs left in the ground all the winter grow and produce well the next summer. They are worthy of a place in any garden, for if the other Onions fail they can be relied upon, and anyone bestowing the trouble to tie them to a stake renders them a curiosity, but they do very well to fall about and grow as they like. I forked the ground over, and gave it a slight dressing of dung from the spent hotbed of the year before, and then planted the bulbs, and did nothing more to them, except keeping the weeds down.—C. E. BRACEBRIDGE, *Kilsby, Rugby*.

[This is a variety of the common Onion, and has been in our gardens many years under the name of *Garden Roccambole*.—Eds.]

OLIVE HOUSE SEEDLING GRAPE.

For this Grape the Fruit Committee of the Royal Horticultural Society at their meeting, December 6th, 1876, awarded Mr. D. P. Bell, *Clive House, Alnwick*, a first-class certificate, to which (as a seedling) he had no claim whatever. It was raised in the garden of his Grace the Duke of Northumberland at *Alnwick Castle* by *William Casley* twenty years ago, who then, as now, was employed in the forcing houses there. The female parent of it was *Black Morocco* impregnated with the pollen of *White Syrian*, for the purpose of causing the former to set its fruit better than it had been in the habit of doing. By the time that the Grapes were ripe some of the berries were noticed as being of unusual size. From these Mr. Casley saved seeds, which were sown by him and produced several plants, the fruit of some being black and of others white. After being fairly tried all but two were found to be nearly worthless. These two are still in cultivation in the houses there, that for which the certificate was awarded being

one of these two. My only motive for interfering in this matter is that honour may be given to whom it is most justly due, and that this excellent Grape may not be sent out under a false name. I may also state that Mr. D. P. Bell has only had it in his possession during the last few years.—ROBERT BOWIE, *The Gardens, Chillingham Castle.*

SPECIAL FLOWER SHOWS.

At page 24, last week, "D., Deal," says the Rose "alone of all flowers can support a distinct show for itself." This is a mistake. Several varieties of florist flowers, such as the Auricula, Tulip, and Carnation, have supported distinct shows for half a century, and they still do so. These beautiful flowers also possess this advantage over the Rose, they thrive near towns where the Rose dies outright. Some of the shows also oftentimes have a good balance on the right side. Rev. J. B. M. Camm, who knows country Rose shows well, says, in the Journal of last year, page 507, "Country Rose shows generally betray failure more or less in some form;" for instance, "Hereford, where the largest balance ever forthcoming was 4d." It ought not to be forgotten either that at the Crystal Palace on April 24th next will be held a show exclusively for Auriculas.—J. DOUGLAS.

THE PINE APPLE AND ITS CULTURE.

ALTHOUGH no longer personally engaged in the culture of this important fruit, I nevertheless look with great interest on what is being done as well as what is said relating to it. I have on more than one occasion asked for information respecting the management and culture of the Pine Apple, now imported in such large quantities from St. Michaels, and am obliged to your correspondent "M." (page 4) for his information on this point, as well as for the article as a whole; but I differ with him on the probable effect these imported Pines will have on the culture of those hitherto grown in this country. "M." seems to think that the growing of Pines will only be discontinued in a very few places, whereas I apprehend they will be given up in a great many, and their culture will be commenced in few or no new gardens, as those imported from St. Michaels being pretty good and the cheap rate they are offered places them in a favourable light with all with whom pounds, shillings, and pence have much influence, and this is a very important body. Besides which, the importers of this fruit seem fully alive to what is wanted in England; and though at first the period for which these Pines were forthcoming was a limited one it has since been very much extended, and by-and-by I have no doubt but they will be to be had all the year round. In future it behoves home growers to try and produce Pine Apples when they are most of all wanted, and especially when foreign Pines are not forthcoming. Of course the requirements of individual cases must determine what is wanted, but in general Pines are most acceptable when other tropical or choice fruits are scarce: hence the advisability of growing a good proportion of plants for winter fruiting.

Although never an extensive Pine-grower, I have always endeavoured to spread those I did grow over the greatest possible space; and how far I have succeeded may be judged by the fact, that although I only grew two kinds of late—Queens and Smooth-leaved Cayennes, I find on looking over the records of the six years ending December, 1875, there were only three calendar months during that period in which no ripe fruit was cut, these being September and October, 1872—both months in which this fruit usually is most abundant—and February, 1874; the greatest number of fruit cut in one year being in 1871, when I find 171 were cut, 162 of these being Queens and 9 Smooth-leaved Cayennes; the total weighing 450 lbs. 4 oz. swardropes, which gives an average of 2 lbs. 10 oz. each, a weight, though not to be compared with fruit usually sent to exhibition, is nevertheless very fair when all are told. I may say here that I am no great advocate for very large fruit. A Queen of, say, 3 lbs. ripened at the time of year when this fruit is in perfection is, in my opinion, large enough. Smooth Cayennes run much larger, but plants of it increase very slowly; thus I find whereas nine of this variety were cut in 1871, and all encouragement possible given to multiply and increase them, we had only eighteen cut in 1875. Of course a number of good plants were in store at the latter period, but I do not think any omitted fruiting that were expected to do so, and as we always allowed the old stools to remain as long as they furnished suckers. I merely point out how slowly this

variety propagates itself compared with Queens, as of the latter any number might have been had during that time, whereas it was customary to cut off the old leaves from the stools of Cayennes, place the plants in smaller pots, and plunge them in the warmest part of the bed. Once or twice I believe I adopted the plan recommended by some of laying the stool horizontally on a box of light soil for the shoots to rise from the side; but even that is a very slow process, and one I cannot recommend as preferable to allowing them to remain in an upright position. Might I ask other practical growers how they succeed in increasing this variety? My plants, I may observe, were all grown in pots and in a tan bed that was turned some two or three times a-year, and more or less new tan added; and about once in two years the old tan was sifted and the fine matter taken away, putting back the rough that did not pass through a sieve of something less than half an inch square in the mesh. The fresh tan was usually allowed to drain a day or two in a shed, when it was mixed with the old in the manner of trenching, which in fact the operation resembled.

With regard to the starving system, as it is called by your correspondent "M." I may say that I have found it very good practice to withhold water from some of the Queens in early summer which were wanted to show fruit as soon as possible. This, however, was only done in a medium degree, and not to the extent to deserve the name "starved," but checked; and the limited quantity of water given to the whole in autumn and winter did not render it necessary to make any distinction with these. Your correspondent is quite right about the uncertainty of Queens fruiting, for it is often provoking to see large fine-looking plants, instead of showing fruit, surround themselves with a host of suckers, most of which are not wanted. I often think those that are what I would call overpotted are most liable to this, but it is not always the case. Another evil I have sometimes had to contend with in Queens—their liability to have overgrown crowns. This I believe is often caused by too much syringing, or keeping up too damp an atmosphere in the house or pit they are growing in. Smooth Cayennes have naturally large crowns, but there is a medium in these too; and the smaller they can be made to be the prettier in my opinion they look, although in that of housekeepers in general who have the fruit to set up for table a large crown is almost as important as a large fruit. Black Jamaicas have also large crowns, but it is so many years since I had much experience with this sort that I have almost forgotten its peculiarities; but it need to be extensively grown in the neighbourhood of Manchester, where it was a special favourite.

Of the last paragraph of "M.'s" very useful article, that relating to insects, more may be said, as notwithstanding the almost thousand and one specifics for the destruction of insects, they are certainly more fatal to this than most insects are to other fruits, not but that the Pine is vigorous enough to stand against them and live; but what a life! and with what disgust does the grower of healthy good plants look upon the white-scale-covered sickly plants; and yet how often is the scale introduced unknown amongst a mass of Pines. I confess having had it twice so introduced, on one occasion the gift of a pretty variegated specimen of, I believe, the Sugar-loaf Pine, quickly infested a houseful of healthy fine plants, and a hundred fruiting-sized plants had to be thrown away and a fresh stock had to be worked-up again. On another occasion the vermin made its appearance without my having known how it was introduced, and a further destruction of plants followed. With mealy bug I have not had so much to do, but the lesson given above me in all cases when such was possible to insist on the Pine having a house or pit entirely to itself, or where Vines had to be grown in the same place to take especial care that they were free from all the pests affecting the Pine. Furthermore, I advise that all Pine houses or pits be separated entirely from structures devoted to the culture of exotic plants, as there are but few collections of those that can be called perfectly free from insects, and "prevention is easier than cure."

With regard to the difficulty of having ripe fruit in the dead winter months, there is not so much trouble this way as might be supposed. I find that the number cut during the month of December in the last six years were respectively two, nine, one, seven, eight, and two, and something like the same for January.

Having described my sufferings on two occasions with white scale, I may relate one on the other side, which though

only on a few plants is yet worth noting. It is a great many years ago when I was entering on a new situation, I found that my predecessor had left some half-dozen little suckers of Queen Pines, and for want of a better place to put them in had potted them and placed them in a plant stove with a collection of mixed plants, and, as might be expected, they were covered with white scale as thickly stuck together as it was possible. One of the best of these I shook-out of the pot, and as some horse dung was fermenting at the time prior to being used for hotbeds for Melons, I buried the plant completely in this hot dung, which I dare say ranged upwards of 100°. It remained there some twenty or thirty hours, when it was taken out and planted in suitable soil in a heated pit intended for Melons, which were also grown in the part adjoining it. This plant thrived and grew fast, quite as much so as I have ever seen a healthy plant, and no scale ever showed itself again upon it, and it eventually ripened a fruit weighing 3½ lbs., which was very fair for a Queen.

I should be very glad if someone would give us a more detailed report of the mode by which those foreign Pines are grown by which the market is at present supplied, as they differ so very much from the starved-looking West Indian fruits we have been accustomed to look upon at certain seasons during the last thirty years or more; and the fact of the geographical position of St. Michaels not being so much tropical as we supposed the Pine Apple required, I have for some time been looking for some information respecting their culture and general treatment.—J. ROBSON.

NOTES ON VILLA AND SUBURBAN GARDENING.

PRUNING EVERGREENS.—In villa gardens the pruning of evergreens is a most essential matter to attend to for more than one reason. In the first place, almost everyone makes a mistake at first by planting too thickly, and when so done by not thinning out early enough to allow those shrubs intended for permanent ornament to grow into an agreeable form. Villa gardens have generally but small spaces to devote to a shrubbery, and there must be some pruning done every year, but then let it be done in a skillful manner. I was along a street in a large town the other day where the gardens in front were planted with Aucubas, variegated and green Hollies, common and Portugal Laurels, Arbor-Vites, Yews, Eucalyptuses, and some low-growing ornamental plants in the foreground. Along this street the gardens are conspicuous for their beauty in summer, but for some time past they have been spoiled in appearance by bad pruning. Laurels have had their branches cut with a knife, and with long slanting cuts which are easily seen from the road, and to add to this ugly appearance the bare stems are many of them left from 4 to 6 inches above the surrounding foliage. Hollies and Yews have been cut with shears, and other shrubs have been trimmed in a similarly careless manner. It will be some time before these shrubs assume their former ornamental character; whereas if they had been carefully pruned in such a way as to hide every cut without exposing the stem as well, by making the cut close to the junction of a smaller or larger shoot as the case may require, the shrubs would still maintain their natural habits though confined by pruning to a smaller space. It is absurd to cut a beautiful shrub or hedge of Holly with shears for the sake of getting it into shape when it can be done so satisfactorily with a knife. The growth is not so vigorous as that of a Laurel, but is stiff and short-jointed; and by a glance at the tree, at the same time bearing in mind the shape it is intended to assume when it is finally left to itself, a selection of shoots for cutting out may be made, which will make the shrub more ornamental than it was before.

Many times it is necessary to think much before cutting, because when a shrub is not intended to be left permanently, and yet it is not advisable to part with it at once, the shoots that are cut from it should be very carefully selected, so as not to destroy the outline, and yet to give room for the shrub next to it. This is the most severe pruning of any, because it is necessary to make room for others more particular; but when the time arrives that no pruning can be done to the shrubs without spoiling them, and then instead of disfiguring them and detracting from the ornamental effect of the surrounding shrubs, I would take them out entirely.

Aucubas are easy shrubs to prune, owing to their close habit of growth. As a rule their outline is good and very natural, and the only pruning needed is in removing a few straggling shoots. Arbor-Vites require very little pruning; sometimes a thinning of the wood is necessary, but a few stakes put inside, and the shoots tied to them, will render them compact for a long time. Laurustinuses may be pruned if desired, but this being the flowering time, no pruning must be done till that is over, which is just before growth commences. I never remember seeing the Laurustinus so full of flowers as this season, and upon

shorter growth than common. I should be glad to hear if its free-flowering is general this winter, it being a mass of flowers, and when it is planted in street gardens it is a conspicuous ornament.

I see in this neighbourhood that Roses are bursting into leaf, and people are afraid to prune them yet, for the back buds are still dormant, and if pruning were done now, and the mild weather continue, these would break, and the chance of a good first bloom would be jeopardised. The Honeyuckle is in leaf also, but if this gets too forward it does not suffer like the Rose.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

We have, as opportunity offered, continued the pruning and nailing of wall trees, and the pruning of standards and dwarfs. As for digging, or even wheeling manure on to the ground, that is not to be thought of, with the ground sodden as it is by the continued rains. The advantage of well-drained soil will be evident this year. Where the soil has not been drained in orchards, and the trees affected with lichens on the branches, this tribe of parasites will have much improved in vigour. There are two very evident causes of the growth of mosses of sorts on fruit trees—namely, crowding the trees too closely together, causing weak unhealthy growth, and planting in soil that is naturally wet without making any preparation to drain away superfluous water. There are soils drained naturally, and others can be easily drained by artificial means owing to the nature of the ground. Other soils, owing to their low lying position, cannot be drained at all. It would be very easy to say that a particular soil and position is the best for fruit-tree culture; but very few gardeners have a choice of soil, and they have generally to make the best out of the means they have at their command.

The kitchen garden at Loxford Hall is composed of soil of the very worst description for fruit trees—light sandy stony stuff over gravel lying close under the surface. It might fitly be compared to Burns' farm at Ellisland, which according to his account was formed "of the riddings of creation." Fourteen years ago there were at least a hundred fruit trees in all stages of decay, some of the Apples dying not from old age but from canker, which had eaten into the centre of the largest branches, and caused decay in those of more recent growth. Some of them could be pushed over by the hand, and no good fruit could be obtained. There was no course but to grub up the trees and replant. Where the gravel was near the surface it was removed, so that 18 inches of soil were obtained; a little heavy loam was worked-in, and some of the same substantial material was placed around the roots when the trees were planted. For several years afterwards the roots were annually lifted, and good loam placed in contact with them; the roots also were encouraged to work upwards by surface-dressings of manure being applied, and out of a large collection of the best sorts only two have been seriously affected with canker—viz., Ribeton Pippin and Dumelow's Seedling or Wellington. The first-named has become notorious for this characteristic, but the other we did not expect to fall from this cause. Pears do better than Apples on our soil; Plums and Cherries better than Pears. The tendency of all the trees is to produce too much young wood, but by careful summer pruning this adds to the production of fruit buds.

Raspberry bushes have been pruned and made ready for the ground being dug the first favourable opportunity. In the quarters of Strawberry plants weeds have been unusually productive. All we have been able to do has been to remove the largest by hand, and wait for a favourable opportunity to set the Dutch hoe to work. If trees are infested with American blight the parts ought to be dressed with paraffin; it does not seem to injure the trees or fruit buds, which boiled oil will do sometimes. The eggs of the Bombyx neustria (lacey moth) may now be found glued to the small twigs of the trees; they are compacted firmly together, and clasp closely the twigs in circles about quarter of an inch wide. They must be sought for and burned.

PINE HOUSES.

We have been re-arranging the stock in the fruiting houses. Our plan is, from a small number of plants to obtain a succession of fruits all the year round. They are not required very frequently, but it is necessary to have them on etated occasions. Under such circumstances it would be foolish to try to have a whole house of Queens to start at one time even if it were possible to do so. One house had been rested in a temperature of from 55° to 60° with a drish atmosphere, and the plants about the 1st of January were quite dry at the roots. By increasing the bottom heat to 90°, as we have done by adding fresh tan to the bed, and raising the temperature of the house to 65° as a minimum, and still keeping the roots dry, nearly all the Pines would start. We do not want this, as the pots were twice watered to thoroughly moisten the dried ball of earth and roots. The atmosphere is fairly moist, and perhaps only one plant in three will

show fruit, the others will come on at uncertain intervals during the spring months. In another house containing Smooth-leaved Cayennes and Charlotte Rothschilds there are plants with fruit in various stages of development. We had fruit at Christmas, and a few more plants will give us good examples during the spring months; more will throw up their fruit by-and-by. We do not fruit more than half a hundred plants in the year, if so many, but they are distributed as nearly as possible equally through the different seasons. When the beds are removed the bottom heat is apt to rise higher than is desirable, and the pots must not be plunged deeply unless the temperature of the bed is under 35°; and it must be seen that this is the highest point that the beds are likely to attain. Some growers do not plunge the pots at all; they add fresh tan when necessary, and merely arrange the pots over it.

Peach HOUSES.

It would save some trouble in answering questions if gardeners and amateurs would consult the "Doings," as a question is sometimes asked that has been answered in this department only a few weeks previously. For instance, it is not necessary to give instructions two or three times during the season as to washing and dressing Peach trees, surfacing the borders, watering, and other operations preliminary to forcing. If this was done when the earliest house was started, it is a waste of valuable space to repeat the directions with the second and third houses. One of the greatest dangers to which trees are subject is an over-dryness of the borders inside. The soil never ought to become dusty dry, as this causes the smaller fibrous roots to decay, a state of matters which will inevitably result in the flowers dropping off at the time of setting. The proper treatment of the trees is this: When all the fruit has been gathered give the borders a good watering; this will establish and mature the blossom buds for next year; in six or eight weeks, if the soil should be dry at the depth of a foot, give another good watering. This will usually be sufficient until it is time to start the house. It is better to water the border before applying the usual surface dressing. If this is moist before it is put on, watering a dry border through it would make it into a pasty condition and unfit it for the young rootlets. If it is put over the border after it is watered the dressing will dry a little before it is time to water a second time. Peach houses require rather more air than vineries, and the trees will not stand such a moist high temperature as will Vines until the Peaches take their second swelling.

Figs in pots have been shaken-out and repotted. It would be better to have done this in October, as the trees would have become established by this time, but they will no doubt start well and fruit freely with good management. We start in a temperature of 50° or 55°, and the pots have the benefit of a little bottom heat. Fig trees delight in rich surface dressings, and the roots work into them with marvellous rapidity when the trees are in full growth.

PLANT STOVE AND ORCHID HOUSES.

In this department it will now be necessary to advance the temperature if it is desirable to have the summer-flowering specimens early in the year. *Ixoras*, for instance, intended to flower in June should be cut down at once and be started in a temperature of 65° at least, increasing it to 70° as the season advances. Our plants have been cut down, which has given us an opportunity to thoroughly cleanse them from mealy bug and scale. Mealy bug is the worst pest of our plant stoves, and cannot be destroyed without persistent hunting-up and washing off at frequent intervals with soapy water. *Ixoras* ought to be thoroughly cleansed from this pest before the new flower buds appear; if this is not done the insects will get into the trusses of flowers, it is not then possible to destroy them without also spoiling the flowers. It is also difficult to keep the bug from Dipladenias, and equally troublesome to remove it from the leaves without seriously injuring them with the soapy water. We do not find any better way to clean stove plants of whatever kind from bug and scale than handwashing with warmish rain water in which a little soft soap has been dissolved, using a soft sponge. After thoroughly cleaning a plant it ought to be looked over in a week, and a careful supervision should be made every week or ten days after, and if this is followed up there is some chance of finally eradicating the insects.

If any choice Ferns or flowering plants require repotting this should be seen to at once; and it may be necessary first to place the potting material in the house with the plants, in order that it may be warmed before using it. If the plants are removed from a warm stove to the temperature of a cold potting shed, the check they would experience during potting would seriously cripple many of the most choice and tender.

Orchids are beginning to start into active growth. *Vandas* of the various East Indian species are showing their flower spikes, likewise *Cypripediums*. *Phalaenopsis amabilis* and *P. grandiflora* are improved by increased warmth and more moisture. Should thrips be seen upon any of them it must either be removed by washing with soapy water or fumigating with tobacco smoke. Some choice species are injured by strong tobacco fumes,

so that it is better to fumigate slightly and often than to overdo it at one time. In the Cattleya house a slight increase is also made in the temperature, and *Dendrobiums*, *Cattleyas*, some *Odontoglossums*, such as *O. citrosum* and others, which have been kept dry at the roots for the last two months, will receive rather more water. Those which are started into growth ought not to become quite dry after this time. In the cool house the same remarks hold good; but many plants in this department, and those the choicest of them, will not endure to be kept dry at any time. *Odontoglossum crispum* is in all stages of development, and we are seldom without flowers of it. Spikes are in full beauty now, others have flowers opening; some are just throwing-up, and a succession can be seen far behind the others. *O. cirrhosum* seems to be very free, and when we obtain the same strength in the plants as can be seen in the imported growths, it will be second only to *O. crispum*. Nearly all the species receive plenty of water after this. They do well with the sphagnum growing in rude health on the surface of the pots. *Masdevallias* thrive under the same treatment. The temperature of the house is about 50°, with plenty of moisture.—
J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Dick Racliff & Co., 129, High Holborn, London.—*Catalogue of Vegetable and Flower Seeds, and List of Garden Requisites.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Seeds for the Kitchen Garden, the Flower Garden, and the Farm.*

J. C. Wheeler & Sons, Gloucester.—*Illustrated "Little Book" and Select Seed List.*

Wm. Cutbush & Son, Highgate, London, N.—*Descriptive Catalogue of Flower, Vegetable, and Farm Seeds, and Garden Requisites.*

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, Garden Tools, Implements, &c.*

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (*Elements Ord.*)—"Cottage Gardener's Dictionary," "Garden Manual," "Thompson's Gardener's Directory."

ADDRESS (F. Green).—We do not know Mr. Trues's present address.

CORBONS (P. M.).—The reply is from a well-known fruit cultivator.

ADROUCLAS (G. S.).—Mr. J. Booth, Fallowthorpe, near Manchester.

CABBAGE LEAVES (T. E. D.).—The "underside" is that facing the soil when the leaf grows horizontally. It is the surface on which the ribs are prominent.

COYENT GARDEN PRICES (*Staines*).—The prices we quote are the retail prices. Early produce if cheap is usually imported.

CONFISERS (*Subscriber*).—We cannot name from mere leaf sprays.

BELUS (S. P. T.).—It is an Allium, and we think it is hardy and will grow in common garden soil.

BARBAROSSA GRAPE.—"J. W." wishes some of our readers who have grown it will state the result of their experience.

SPRING-FLOWERING PLANTS (*Alpha No. 1*).—All spring-flowering plants may be planted this and next month, but we should prefer planting not the early part of March, the ground being much too wet at present. Some of the best spring plants are *Arabis sibirica*, *A. alpina variegata*, *Alyssum saxatile compactum*, *Autritia grandiflora*, double *Daisies*, *Wallflowers*, *Iberis gibraltarica*, *Myosotis sylvatica*, *M. dissitiflora*; *Penny white*, yellow, blue, and purple; double *Fritillaries*, and *Gentians verna*. *Helleborus niger* and different varieties of *Hepaticas* should be planted at once. Annuals for spring flowering should have been sown in September.

ROSES SHEDDING THEIR LEAVES (*Edgbaston*).—The symptoms are those resulting from an imperfect supply of water and bad nourishment. Report (but do not disturb the ball much, only picking-out any loose soil from among the roots), in turfy loam with a fourth of decayed manure added, prodigious good drainage. Sprinkle the plants overhead twice a day, morning and evening, watering with weak liquid manure at every alternate watering after the flower buds show.

VINES IN CONSERVATORY (*A Lady Gardener*).—Plants do not generally succeed beneath Vines, the leaves obstructing the light, but as a slight shade is desirable in a conservatory, and the Vines being leafless in winter, there is really no objection to them provided they are not allowed to cover the roof too densely. In your case Vines at 4 to 4 feet 6 inches distance apart we should consider desirable. If you can command a certain supply of gas that would be the best mode of heating your house, having a gas-heated boiler with hot-water pipes sufficient to circulate round; or the house might probably be most economically heated by a boiler fixed at the back of the fire in the room, yet a separate apparatus would be best, gas being the least trouble of any.

GRUBS IN STRAWBERRY BED (H. S. F.).—It is likely the grubs will do your Strawberry plants considerable mischief. We should go over the plants, examining each separately, and destroy the grubs, making the soil firm about the plants afterwards. A dressing of gas lime at the rate of twenty bushels per acre is good against the grubs, and watering with ammoniacal liquor from the gasworks diluted with water, one gallon of ammoniacal liquor to twelve of water, giving each plant a good watering, would be beneficial.

BLANCHING WITLOFF (Idem).—Cut off the leaves to within an inch of the crown of the roots, and cover the ground to a depth of 8 or 9 inches with any light dry material, as cocoa-nut fibre refuse, sawdust, or tree leaves, placing a little litter over the latter to keep them from being blown about by wind, and the young leaves of the Witloff will come through the covering material, and from the exclusion of light be blanched, they being in fine order for salads when from 6 to 8 inches long. We take up the roots, cut the tops off about an inch above the crown, and place in rich light soil up to the crown about 8 or 4 inches apart in a dark place, with a temperature of about 55°, in which they do splendidly.

REMOVING CLEMATIS STOCK (A. J. B.).—Any time after the middle of February in mild weather, but before fresh growth takes place, is suitable. Take it off at its origin with the parent plant, being careful not to injure more of the roots than can be helped, being satisfied with a moderate amount of roots to the sucker rather than going so near the old plant as to injure its roots to a serious extent.

CAMELLIA BUDS DROOPING (J. F. C.).—Camellia with the best-formed flowers are more prone to cast their buds than semi-double varieties; but as the former are the most desirable and the defect arises from ill health or is consequent of some error of culture, we certainly should not discard any superior kinds as Congress of Ellensmers, white, striped and mottled roses, and the plea, still one of the best whites. Probably the soil border is imperfectly drained. The cause principally of Camellia buds falling is an inactive state of the roots or an insufficient supply of water after the buds are set. We do not find any compost so suitable as the top inch of a pasture where the soil is light, or the chipped up rather fine pots and rough for borders and more admirable in both instances providing good drainage and potting rather firmly. The soil is always kept moist, a thorough watering being given before the soil becomes dry. On a dry day is sufficient to cause the buds to be cast in a "shower," and suddenness of the soil causes the loss of the buds and full indication of swelling. A top-dressing of cow dung in February, or earlier, induces the roots to the surface and encourages free growth of the plants and swelling of the buds. The following are good varieties:—*Mathotiana alba*, fine white; *Deauli* (*Lecana soperla*), crimson; *Yakovarda*, rose; and *Comtesse Lavinia Magi*, white, striped and double crimson. *Stella* is also very fine, is a good compost, vegetable matter being an essential of Camellia culture. Renovate the border in February.

FORCING STRAWBERRIES (W. H.).—You will see instructions in "Doings" from time to time. Your plants ought now to be well established in their fruiting pots, and success will be problematical. The pots should be placed near a glass in the forenoon, and the temperature ought not to be more than 50° at night to start with. In cold weather 45° would be enough; gradually increase this as the plants show signs of growth, and raise it to 60° at night when the flower buds appear. They require liberal supplies of water. Forcigt shoots on fruit trees are those that grow out from the wall in such a position that they cannot easily be raised in without breaking.

GROWING PEACH TREES ON BORDER FENCE (Hortus).—There is rather a favoured district, but we cannot give you the assurance that Peach trees will be perfectly successful, still the plan is worthy of a trial. Peaches have been ripened on espaliers on a south sloping hill in Essex; we have also ripened Nectarines on a standard tree in a shrubbery. The difficulty is to maintain the trees in good health, and the winter frost is an obstacle, at night, and it is very difficult to keep aphid and red spider from them; and worst of all the spring frosts cut off the blossoms, or dull cold days and nights prevent their setting. There is no other way we can recommend except to build a wall or an orchard house.

SOWING ACALIA SEEDS (Amateur).—The plants are easily raised. If you have no greenhouse sow in pots in light loam and leaf soil, and place the pots in a gentle hotbed in March. The seedlings will come up in two or three weeks.

WINTERING ADIANTHUM CUNEATUM (Idem).—We have seen it wintered in a room where a fire was only kept in cold weather. The plant was well attended to as to watering and keeping the fronds free from dust. The potting material was composed of turfy loam and turfy peat in equal proportions with a little sand; a few bits of charcoal added is an improvement.

APHIS ON PEACH TREES (Old Subscriber).—Do not use paraffin either in the soil or on the trees. Hand-washing the branches with strong soft-soapy water will destroy the insects effectually.

INARCHING MADRESFIELD COURT GRAPE ON GROS COLMAN (Constant Reader).—If Gros Colman does not please you, traie one of the other varieties you name into the last, and the variety next to the condemned root will be most convenient. Madresfield Court is not a good variety.

VINES IN POT FALLING (X. X.).—We fancy that either the roots have been injured with too much bottom heat, or else you do not give them enough water. It is not possible to say more than this from the data given in your letter. Examine the roots and see what they are like.

EXHIBITING FERNS.—We inadvertently inserted the word "classes," which we did not occur in Mr. Shuttleworth's manuscript.

MATERIAL FOR TYING WINDWOOD FRUIT TREES (F. J.).—For temporary purposes, or to secure small trees from frost, the best material is straw admirably; but for fastening the strong shoots or branches nothing answers so well as tar twine.

TRANSPLANTING ROSES (Idem).—You may move the Roses now or next month in mild weather. Plant them next month if you can, and do not prune at least a month afterwards. In transplanting old Rose trees do not cut the stems more than you can get rid of, or only a very little, so that the roots will not be any deeper after the old settee than they were before removal.

TRANSPLANTING BRIARS (Tyro).—Briars may be transplanted until March, but the earlier they are planted the better. In obtaining Briars great care should be used in selecting stout healthy stocks. Many men who are paid so much a piece often bring in anything they can find, black, hide-bound, old worn-out Briars, which are probably many years older than themselves. You had better make an agreement to pay 1d. for each Briar, reserving the right

of rejecting all that are not likely to do well. Rose cuttings which do well will bloom next June, but they are generally inferior to Roses worked on the Mallett.—"WYLD SAVAGE.

SAWDUST (J. M.).—It is bad as a top-dressing for pastures or meadows, as it injures the Grass and is long in decaying. It is best applied to heavy and light soils. We should only mix blood with it to facilitate the spreading of the latter. Youatt on "Cattle," and Milburn on "The Cow," are useful books. We do not know who publishes them; your bookseller could ascertain.

POINSETTIA PULCHERRIMA (E. G.).—You can obtain it and the Justicia from any of the principal florists who advertise in this Journal.

NAME OF FERT (E. Bernard, Greenwell).—Blanchita the preceding.

NAMES OF PLANTS (J. Huxh).—*Sparmannia africana*. (Subscriber).—*Cypripedium barbatum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE AQUARIUM POULTRY SHOW SCHEDULE.

We welcome the new show cordially, and wish it much success; we hope it will be annual. Only those who have experienced it know how tedious the journey is from the London stations to the Crystal Palace; and as for the Alexandria meeting, we really thought we were never going to reach it. At the Aquarium all this will be done away from, for by cab, "bus, or underground" we can arrive almost at the Exhibition's very doors. The Honorary Secretaries are Messrs. Austin and Custance. The latter gentleman we are unacquainted with; the former we believe was one of Mr. Howard's chief clerks, so he should be thoroughly master of the work before him. The Treasurers are Messrs. Jones and Pratt, and the bank is the Union Bank of England. Thus much we find on the first page; and beyond Mr. Brown, whose name is put down as the "Superintendent of poultry," we find no other members of committee, guarantors, or managers.

We were a few weeks back at a suburban show, where we for the first time heard of this proposed exhibition, and long and loud then were the tales which were circulated about this projected Show. Since then we conclude some different arrangements have been made, for we are amused to hear that those parties, then so indignant, have now gone over to the other side. We think the appearance of the inside pages of the schedule much embellished by the border advertisements of one of the Treasurers. The programme has not that clear and defined look which Mr. Howard's little pamphlet gives us. Still the classification is good, and it is fully apparent that a knowing hand has been at work among the breeds. The entry fee is 7s. 6d. per pen. We call it immense. The prizes are in most classes £2, £1, and 10s., and a 6s. fee would have been ample. Coming at the time of year as the Show does we are sure a 6s. fee would have paid the Committee much better. We cannot help quoting Oxford—we consider it *par excellence* the schedule of the day, for with a 60s. first prize the fee is only 6s., and the classification admirable. Again, we do not think it fair, neither does the poultry world generally, that the fee should be the same in classes where the prizes are not equal—viz., Bantams have 4s in every class without the chance of a cup, while Dorking, Cochins, Bantams, Game, &c., have only £3 10s. for the same fee. We are glad to see that most breeds have £5 5s. Selling classes. Such are most useful, and afford all an opportunity of buying a good and useful pair cheaply. Malays, Polish, Silkies, and Andalusians have classes, and we hope to find them all well filled. Bantams and Ducks are fairly classified. We can find no classes for Geese or Turkeys, so the north country antediluvians will have to stop at home, and fail to add another triumph to their list of prizes.

Next come the Pigeons. Pouters have half a score of classes, with the same prizes as poultry, and 2s. each pen less in entrance fee. If this is called fair we differ with such opinion greatly. Class 77 is for a champion class for Carriers (cocks) of any colour over one year, which have won not less than three first prizes £1 each. Then follow a dozen more Carrier classes for birds of 1876 and older. Dragons come next with a modest number of classes—"we are seven" being their motto. Tumblers, Barbs, and Jacobins are well cared for; while we are glad to see Fantails have three classes, the English and Scotch styles being both provided for. Nuns, Trumpeters, foreign Owls, Swallows, and Archangels each have a class. English Owls have a champion one, and those not eligible in such a class have three more to appear in. Turbits and Antwerps have each three divisions; while, thanks to our Oxford friends we expect, Magpies Black and Magpies "Red and Yellow" each have classes. Then one for any other variety, a flying class, and three for sale specimens, and this goodly Pigeon menu. A most competent staff of Judges has been selected, whose names and the classes they will take in hand will be fully found on page 5 of the schedule.

We note with much pleasure that the poultry classes have also each their Judges announced; and though in many cases we doubt if the division has been wise, still we welcome the new plan most cordially, and would tell exhibitors that as they know beforehand who will judge the various classes, so if they

enter they will have no reasonable ground for after grumbling. The entries close on the 25th, and the offices are at 172, Strand, W.C. The Secretaries request that all money orders and cheques should be crossed to the Union Bank of London. The total number of cups offered is fifty-two, which range in value from £5 5s. to £2 2s., and money may be received in lieu of cups. So far all arrangements seem to be straightforward and open, and we hope when we attend to criticise the exhibition that we may find that in arrangements and organisation Mr. Howard's cloak has fallen upon his pupil, and that all is working well.—W.

POULTRY KEEPING.

I COMMENCED some three years since, and began by purchasing expensive sittings. At the end of the first year I found myself £5 deficient in money, but in possession of a very few good birds hatched from eggs procured from Pickles, Crabtree, and Fowler. The second year, by killing off fanly and ill-shapen birds, I acquired what might be termed a fair assortment of very good birds. Having disposed of all my stock save twelve Dark Brahma hens, of ages varying from ten to eighteen months, and two male birds of the respective ages of ten and twenty months, I constructed a breeding pen consisting of three best hens and the twenty-months cock by Pickles. From these I averaged six eggs a week each; the other nine hens with the cockerel of ten months I allowed the range of a large enclosure. I sold during the season twelve sittings of eggs, besides hatching sixty-three chickens, forty-nine of which went to table. I also hatched two broods of ducklings for table use. Besides those mentioned I procured five Houdan pullets to supply eggs for table. I have still fifteen last. I had very few eggs from them last season, and up to the present (January 9th) none, although my Brahma fowls have laid regularly since the first week in December. I cannot say that my experience of the Houdan fowl is by any means satisfactory. The cost of feeding last year amounted to £12 10s., while the value of 1061 eggs (including the twelve sittings sold) and of the forty-nine chickens eaten, amounted to £15 11s., leaving a profit of £3 1s. for the season. Some of my chickens weighed 7 lbs. a couple. The food consisted of ground oats or barley meal in the morning; wheat, barley, or maize varied for afternoon meal, the mid-day meal consisting of kitchen scraps boiled with potatoes or rice. My fowls have a good grass run, ash heap, &c. I have tried Buff Cochins, Light Brahmas, Spanish, and half-bred of all descriptions, and for myself prefer the Dark Brahma to any other.—E. D.

CUPAR POULTRY SHOW.

THE third Show of poultry and Pigeons at Cupar was one of the best managed we have ever seen in Scotland. The pens were from Edinburgh, and excellent sand was strewn on the bottom, plenty of soft food and water were provided, and the birds were very comfortable.

Game headed the list with Black Red cocks and every bird noticed, hens being also good, and the winning Brown Reds good in both classes. Any other colour were mostly Duckwings, and in this class two birds were disqualified, the Judge deciding that the wing hints had been dyed to enhance the evenness of colour. One of these birds was said to be the cock to which the cup was awarded at the late Edinburgh Show, and there is no doubt but that these would have been placed first and second had they been left in a natural state. Hens were an extraordinary class. The first a sturdy built Duckwing, second a Pile, and third a Duckwing. *Dorkings* were good in both classes, the Silver-Greys especially. *Spanish* only moderate, but *Cochins* and *Brahmas* good. *Scotch Greys* were the best classes of the Show, and nowhere have we seen them as good as here, the competition being very severe, and very nice points determining the awards. *Hamburghs* were mixed classes. In Spangle cocks first was a Silver and second Gold, the main fault in this class being coarseness of comb. Hens a very good class. The Pencils were not as good as classes, but the winners fully bore out the quality of the Spangles. *Bantams* were poor with few exceptions, but there was one grand pen of Blacks.

Pigeons had few classes, but these were well filled. The White Pouters grand class, and every eye noticed, though some were lost on account of the soiled state of their plumage. Any other colour were—first Blue, second Red, and third Black. *Fantails* poor, as also the Tumblers, but there were some good Jacobins. The first in the Variety class was a Silver Dragon, second a Dun Carrier hen, and third a Black Barb. There were few good birds in the Selling class, although it was very large.

POULTRY.—GAME.—Black Red—Cock-1, J. Robertson, 2, W. McKinnon, 3, W. Cruickshanks, Hen-1, A. McKinnon, 2, J. Hall, 3, W. McKinnon, 4, W. Webster, 5, W. Webster, 6, J. Simpson, Hen-1, 2, 3, 4, 5, and 6, and 7, W. Webster, 8, C. Crawford, Any other colour—Cock-1, E. Macleish, 2, W. Cruickshanks, 3, S. Young, Hen-1, D. Simpson, 2, W. A. Swan, 3, J. Wallace, 4, J. Wishart, 5, Fisher, jun., Duckings—Silver-Grey—Cock-1, D. Aonan, 2 and 3, Admiral M. Douglass, 4, D. Aonan, 5, Mrs. Armstrong, 6, J. Rutherford, Any other colour—Cock-1 and 2, G. S. Robb, 3, Mrs. Armstrong, 4, J. Rutherford, Hen-1, Lieut.

Col. Rice, 2, D. Aonan, 3, Mrs. Armstrong, 4, G. S. Robb, SPANISH—Cock-1, A. Grievie, 2, G. Wilson, 3, J. Norval, 4, Herd & Bisset, Hen-1, A. Grievie, 2, J. Norval, 3, D. B. Murray, BRAHMA FOWLS—Cock-1, W. G. Duocan, 2, Miss M. Morrison, 3, D. Aonan, 4, A. Burnett, Hen-1, and 2, J. Sandeman, 3, J. Smart, 4, J. A. Dempster, COCHIN—Cock-1 and 2, Mrs. Davidson, 3, D. Brydrough, 4, Mrs. G. Duocan, 5, A. S. Drydrough, SCOTCH GREY—Cock-1 and 2, A. Hamilton, 3, H. B. Marshall, Extra 3, R. Weir, 4, W. R. Park, Hen-1, 2, and Equal, A. Hamilton, 2, R. Weir, 3, W. R. Park, 4, H. B. Marshall, HAMBURGH—Cock-1, J. M. Campbell, 2, W. R. Park, 3, J. Grierson, Hen-1, J. M. Campbell, 2, A. G. Lindsay, 3, Mrs. Keddin, FENCIBLE—Cock-1, P. McLean, 2, J. Pratt, 3, H. Swedston, Hen-1, A. Fraser, 2, A. G. Hamilton, 3, W. R. Park, FRENCH FOWLS—1, W. R. Park, 2, A. Robertson, 3, J. Smart, Any OTHER FINE BREED—1, W. Henry, 2, J. D. Laird, 3, J. Rutherford, 4, W. R. Park, 5, H. B. Marshall, BROWN—Cock-1, R. H. Ashton, 2, D. Lang, Game, any other colour—1, J. Watson, 2 and 3, R. Clark, Any other variety—1, J. Wallace, 2, R. H. Ashton, 3, J. Taylor, 4, D. Donald, 5, S. Young, CLASS—1, J. Smith, 2, A. Ramsay, 3, W. Stevie, 4, W. W. Wallis, Hen-1, A. Ramsay, 2 and 3, D. Aonan, 4, J. Wallace, Deceas—Equal 1 and 2, W. G. Duocan, 3, D. Aonan, HENNA, or any other FINE BREED—1, W. Morrison, 2, J. Campbell, 3, R. H. Ashton, 4, J. Allan, Equal 1 and 2, A. Hamilton, TRESK—1, D. B. Fieldman, 2, D. Aonan, 3, Admiral M. Douglass.

PIGEONS.—ROCKMAN—White—Cock or Hen—1, G. Henderson, 2, W. Morrison, 3, J. T. Saunderson, Any other colour—Cock or Hen—1 and 2, G. Alexander, 2 and Equal 3, A. Briggs, 4, G. Henderson, A. Glass, FANTAILS—Cock or Hen—1, J. Glenday, 2, W. H. Roberts, 3, W. R. Davidson, 4, J. Smart, 5, H. B. Marshall, HAMBURGH—Cock-1, J. M. Kidd, 2, H. C. Colston, JACOBS—Cock or Hen—1, W. & R. Davidson, 2, R. Scott, 3, A. Briggs, Any OTHER SORT—Cock or Hen—1, W. Smith, 2, A. Duncanson, 3, T. L. Johnston, 4, J. SELLING CLASS—Cock or Hen—1, T. Rodger, 2, J. Glenday, 3, W. H. Roberts.

CANARIES.—SCOTCH FANCY.—Yellow—Cock—1, J. Paul, 2, 3, Shepherd, 3, J. Stewart, 4, J. Mitchell, Hen-1, J. Wallace, 2, J. Paton, 3, Mrs. D. Black, 4, J. Paul, Buff—Cock-1, G. Stewart, 2, J. Wallace, 3, W. Mitchell, 4, A. Adamson, Hen-1, J. J. Paul, 2, J. Culbert, 3, W. Paton, 4, A. Adamson, FRENCH SORT—Yellow—Cock-1, J. Elder, 2, J. Paul, 3, P. Smith, 4, J. Culbert, Hen-1 and 2, W. Mitchell, 2, T. Curran, 4, Mrs. D. Black, Buff—Cock-1, P. Smith, 2, R. Smart, 3, Mrs. D. Black, 4, J. Shepperd, Hen-1, J. Cowan, 2, Mrs. D. Black, 3, J. Elder, 4, T. Curran, BELGIAN FANCY.—1, J. Stewart, 2, Mrs. D. Black, 3, J. Shepperd, 4, J. Stewart, FOWL-FEATHERED—Cock or Hen-1, T. Curran, 2, A. Adamson, 3, J. Speed, 4, R. M. Lauchlin, GOLDFEATHER MULES—Buff—Cock or Hen-1 and 2, W. R. Park, 3, J. Cowan, 4, G. Franks, SELLING CLASS—Cock or Hen-1, G. Stewart, 2, 1. Gillies, 3, J. Curran, 4, J. Culbert.

JUDGES.—Poultry and Pigeons: Mr. E. Hutton. Cage Birds: Messrs. Robertson and Mitchell.

ULVERSTON SHOW OF CAGE BIRDS.

This Show of Poultry, Pigeons, and Cage Birds was held in the Drill Hall on Thursday and Friday, January 11th and 12th.

The Show of Cage Birds was not quite so large as the previous one, but still the quality and condition of the birds were all that could be desired. The Belgian and Selling classes were the heaviest filled, and in the former especially were some very fair specimens. Several birds in the classes were "thrown out" for discrepancy and deficiency of feathers, among which was a Clear Yellow Norwich and three Dark Mules. A point cup was won by Mr. J. C. Salt of Burton.

CANARIES.—Belgian—Clear or Yellow-marked—1, J. Robinson, 2 and 3, J. Paxton, Extra 2, Brookbank, Extra 3, J. Moffat, Clear or Buff-marked—1, J. Moffat, 2, J. Paxton, 3, J. Brookbank, Extra 3, J. Paxton, Norwich—Clear Yellow—1 and 2, J. Adams, 3, C. J. Salt, Extra 2, D. Audley, Clear Buff—1 and 2, J. Adams, 3, Adams, Evenly-marked Yellow—1 and 3, J. Adams, 2, D. Audley, Evenly-marked Buff—1 and 3, C. J. Salt, 2, Withheld, Yorkshire—Clear Yellow or Buff—1, 2, and 3, J. Thacker, Evenly-marked Yellow or Buff—1 and 2, J. Adams, 3, Adams, Dark Goldfinch and Canary Mule—1 and 2, C. J. Salt, 2 and 3, Withheld, GOLDFEATHER—Moulded—1, J. Brookbank, 2, T. Kirkbride, 3, S. Christopherson, SELLING CLASS—1, D. Audley, 2 and 3, J. Adams, 4, C. J. Salt.

JUDGE.—Mr. G. J. Barneyay.

DOUGLAS MIXTURE.

At this season of the year, when colds, catarrh, roup, &c., are most prevalent among the poultry, one of the best preventives—and in many cases a remedy—is the well-known Douglas mixture.

As familiar as its name is to most of our readers, there are but few who know of what it is composed, and how simple a matter it is to prepare it. It consists of half a pound sulphate of iron, 1 oz. sulphuric acid, and two gallons of water. Give a teaspoonful in each half pint of drinking water.—(Pet-stock, Pigeon, and Poultry Bulletin.)

A BEE-KEEPER'S RETROSPECT.

At the close of the year, and the opening of the new year we are naturally led to take a retrospect of the past and anticipate the future. As regards "our Journal," we look out the file, and spend one or two long winter evenings not unpleasantly going over the numbers of the bypast year, successively divesting them of their advertising sheets to make ready for the binder, at the same time scanning their contents and re-reading anything of special interest. By this mode we come on many an old matter previously overlooked. We make notes as we proceed of unknown highly commended herbageous plants, &c.—those dear old-fashioned flowers, to add to our collection. We delightedly peruse all the rose lore, thoroughly enjoying Mr. Camm's rich contributions, and one or two long articles on Adam Lacharme's revenge on that cleric; endorse all Mr. Peach has

so well said on the value of Manetti and the worthlessness of the briar stock for light soils and severe winters; and have no sympathy with that "WILD SAVAGE," and are especially grateful for Mr. Hinton's invaluable rose poll; and so should you, too, Messieurs the Editors, for we made it a rule since its first appearance to present every rose-loving friend far and near with a copy, and have been thanked in return and told, "The rose poll is capital, we have (or we mean to take in the Journal)" as the case may be. We carefully studied our chief's able pomological descriptions, and again minutely revisit the ancestral nursery of Sawbridgeworth, the birthplace of our pyramidal trees; and as we take yet another look at Miss Gresswell's clever sketch of Early Wood our White and Silver-Grey Dorkings assume a fresh interest; and then we reach our own especial corner, and what have we to say of it?

We apianians have great cause for thankfulness in the year that has gone. 1876 opened most inauspiciously, with a cold backward spring advancing into as hopeless a summer. So unpropitious did it become that latterly we began seriously to consider feeding our non-swarming colonies, which by this time the straw-briars tired of doing. But the tide turned at last with such a flow as filled the hearts and hives of our little favourites with joy and gladness, commencing opportunely when the failure of the beetroot crop so raised the price of sugar as would have made a second autumnal heavy feeding a serious matter to many a poor bee-keeper.

We think kindly of "the captain on the paddle-box," and only wish he would study our old log-book more, to save we deck hands taking soundings of assertion schools to get backed off in time, remembering our log is read in America and on the Continent. Our thoughts revert back, too, to our "old captain," with many a pleasant reminiscence of his good seamanship. We trust during the present year no one will be allowed to call him hard names: he is dead, and we bronzed tars among the crew revere his memory.

We permit our Ealing Rise shipmate's interesting report of the fertile worker, we smile and chuck at why his account might be turned it than dissecting in the forecastle had he passed it fit to the "captain on the paddle-box," who offered a large round sum for its production while denying the existence of any such.

Then, again, we think with "B. & W." it very hard to deny our favourites the power of carrying the nectar of the flower right aloft into their supers without being first deposited in that intermediate state, we have as yet failed to discover.

We thought we had done, but on the last page Mr. Pettigrew while summing-up "Another Year's Experience" hazards three theoretic propositions which do not bear the test of experience. The first—"Stories are told of bees living continuously in the cavities of trees and roofs of houses. That bees live occasionally in such places a few years without attention from the hand of man I can readily believe, but having doubted that honey bees are natives (originally) of Great Britain, I have given but little credence to the stories alluded to," &c. I have been reminded thereunto that it is just sixteen years this month since I shipped on board the old craft, and curious enough my first contribution was chronicling the great success of my bees, in which high latitude I started bee-keeping some four years previously; and it is there recorded that stretches of comb foundations were measured 6 feet in length, showing that my garret tenants were not the transitory visitants Mr. Pettigrew imagines. In the roof of an old mansion in an adjoining parish I have heard of as much as a washing-tub of comb taken out on the demolition of an old colony; and in this neighbourhood bees displayed so great a partiality for the roof of a mansion, that the worthy baronet need not exclude them till he caused the slates to be stripped off and covered underneath with thick asphalted felt, heavy paper tried previously having been gnawed through. The second correspondent is also mistaken as to bees so dreading cold, if dry. Witness their survival through the most severe Russian and Canadian winters; and here in our own as well as in our neighbour's roof they always showed a marked partiality in selecting a north aspect. And why? Because they there enjoyed the maximum of winter dormancy with the consequent minimum consumption of store.

The second point. Sugar-fabricated super combs would not pass muster even if practical for super honeycombs, as it is well known to all storifiers that the presence of the whitest of the previous season's empty comb quite mars the beauty of the completed box, consequently such are only fit to contain honey for running, or more useful still, to be cut out for guide if of worker pattern. Mr. Pettigrew has repeatedly recommended employing empty drone comb for such purpose, which induces the construction of drone combs, and from the coarser appearance in supers their market value is lowered.

The third and last point is the question of the superiority of the Italian bee now olivatised in Great Britain during fifteen years; and one would think it is rather late in the day calling for competitive tests, but advanced apianians having satisfied themselves individually long ago on that point. We generally find

the sceptical as those who have preconcived them unworthy of a trial. But as I have already encroached too much on valuable space must leave over detailing some of my experiences with the yellow-jacket to another opportunity.—A RENFREW-SHIRE BEE-KEEPER.

OUR LETTER BOX.

CHICKENS CRAMPED (J. C. O.).—It is caused by the cold and wet. Keep them in the greenhouse, and give them bread soaked in ale night and morning.

CHARACTERISTICS OF ROUEN DUCKS AND BLACK HAMBURGERS (A. P. W.).—The Black Hamburg cock should have entirely black plumage all over his body, a well-formed roost comb firmly seated on the head, with a good pike behind turning upwards. Any such mixture of colour as you name would be fatal to any hope of success. All Black cocks are prone to have red, yellow, or white feathers, but they cannot be passed over. Rouen Ducks and drakes should be the counterparts of the wild Duck and mallard, no difference can be allowed. They are most frequently faulty in their bills. The Drake may have no ring round her neck. Neither Duck nor drake may have white feathers in their wings.

SPRATT'S FOOD (G. M.).—We do not know how much should be mixed with the morning meal of well-mixed mangold and barley meal (hot) for your twelve Brahms hens.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.		Rain.	
	Barom. at Sea Level.	Hygrometer.	Direction of Wind.	Shade Temperature.		Radiation Temperature.
1877.						
Jan.		Dry. Wet.		Max. Min.	In sun. On grass.	
	Inches.	deg. deg.	deg. deg.	deg. deg.	deg. deg.	
We. 10	30.094	35.5 35.5	N.E.	45.0 46.5	39.3 51.1	36.8 0.956
Th. 11	29.649	37.3 37.2	N.W.	44.0 44.0	37.1 45.0	38.2 0.074.
Fr. 12	29.810	36.1 35.0	W.N.W.	43.0 43.0	33.3 39.3	34.5 0.000
Sat. 13	30.019	36.0 35.0	W.S.W.	42.0 41.5	39.8 51.8	31.8 0.072
Sun. 14	29.775	34.2 46.6	S.	39.0 50.1	35.4 52.2	30.4 0.265
Mo. 15	29.396	36.1 31.9	W.	43.0 46.1	35.9 74.1	31.1 0.000
Tu. 16	30.069	37.5 36.7	S.W.	41.0 45.0	35.4 53.4	32.0 0.040
Means.	29.939	33.2 38.7		41.0 45.0	34.4 53.7	32.0 0.997

REMARKS.

10th.—Very foggy morning and dark showery; the rain at times very heavy.

11th.—Fair, but dull and cold; rain at 9 A.M., and at intervals all day.

12th.—Fair, but thick and cold; white frost during the day; sun seen at noon, and fair at night.

13th.—Foggy, and at times extremely dark; sunny at 1 P.M.; fair afternoon, but still evening.

14th.—Dull, but fair morning; rain from noon all the rest of the day, but only showery.

15th.—Fine, dry, and bright all day; shower in the evening, but brilliant starlight night; a more pleasant day than we have had for some weeks.

16th.—Rainy morning, but fine by 11 A.M.; very bright at times, and the showers that fell were very light; the temperature much higher than yesterday.

Not nearly so warm as the two preceding weeks, but muggy and damp. Rainfall again above the average.—G. J. SIMONS.

COVENT GARDEN MARKET.—JANUARY 17.

TRADE continues very quiet, and with the exception of best goods prices rule low, with scarcely any alteration. Kent Cobs, with a short supply and moderate demand, are slightly better.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	1	6	0	Nectarines.....	dozen	0	10	0
Apricots.....	dozen	0	0	0	Oranges.....	dozen	0	10	0
Bananas.....	dozen	0	0	0	Peaches.....	dozen	0	0	0
Currants.....	1	1	0	0	Pears, kitchen.....	dozen	1	0	0
Black.....	1	1	0	0	dessert.....	dozen	3	0	0
Fig.....	dozen	0	0	0	Grapes, black.....	dozen	3	0	0
Filberts.....	lb.	0	0	0	Pinna.....	1	1	0	0
Cobs.....	lb.	1	0	1	Quinces.....	bushel	0	0	0
Gooseberries.....	dozen	0	0	0	Raspberries.....	dozen	0	0	0
Grapes, hothouse.....	lb.	2	0	0	Strawberries.....	lb.	0	0	0
Lemons.....	1/100	6	10	0	Walnuts.....	bushel	6	0	0
Melons.....	each	1	0	0		1/100	1	2	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	0	0	0	Mushrooms.....	pottle	1	5	0
Asparagus.....	1/100	8	0	10	Mustard & Cress.....	punnet	2	4	0
Beans.....	dozen	0	0	0	Onions.....	dozen	0	0	0
Beet, Red.....	dozen	1	6	0	Pickling.....	quart	0	4	0
Broccoli.....	bunch	0	0	0	Parsley.....	doz. bunches	2	0	0
Brussels Sprouts.....	1	1	0	0	Peas.....	dozen	0	0	0
Cabbage.....	dozen	0	2	0	Potatoes.....	bushel	2	6	0
Carrots.....	bunch	0	0	0	Raspberries.....	dozen	3	6	0
Cassia.....	1/10	1	6	2	New.....	lb.	1	0	0
Cauliflower.....	dozen	5	0	0	Radishes.....	doz. bunches	1	0	1
Celery.....	bunch	1	6	0	Salsify.....	bushel	3	0	1
Coleworts.....	bundle	2	4	0	Salsify.....	bunch	4	0	0
Cucumbers.....	each	1	6	0	Sourzonera.....	bushel	1	0	0
Endive.....	dozen	1	0	0	Seakale.....	basket	1	6	0
Fennel.....	bunch	1	0	0	Shallots.....	dozen	1	0	0
Garlic.....	lb.	0	5	0	Spinach.....	boshel	2	6	0
Herbs.....	bunch	0	3	0	Tomatoes.....	sieve	0	0	0
Home-made.....	bunch	2	0	0	Turnips.....	bunch	4	0	0
Lettuce.....	dozen	1	0	0	Vegetable Marrows.....	0	0	0	0
Leeks.....	bunch	0	4	0					

WEEKLY CALENDAR.

JANUARY 25-31, 1877.			Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
Day of Month.	Day of Week.		Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.	
25	Th	Royal Society at 8.50 P.M.	43.4	32.3	37.9	7 50	4 35	11 3	4 32	11	12 42	25
26	F	Queckett (Microscopical) Club at 8 P.M.	45.5	32.3	38.9	7 49	4 37	11 39	5 50	12	13 55	26
27	S		44.5	31.2	37.9	7 47	4 39	0 34	6 52	13	15 7	27
28	SN	SEPTUAGESIMA.	45.8	30.8	38.8	7 46	4 40	1 50	7 35	14	18 18	28
29	M	London Institution at 5 P.M.	45.6	31.5	38.5	7 45	4 41	3 22	8 5	15	13 29	29
30	Tu		44.7	32.2	38.5	7 45	4 43	4 59	8 25	16	13 48	30
31	W	Society of Arts at 8 P.M.	44.9	30.9	37.9	7 42	4 45	6 35	8 31	17	13 57	31

From observations taken near London during forty-three years, the average day temperature of the week is 44.5°; and its night temperature 31.7.

KITCHEN-GARDEN MEMORANDA.



VERY summer and every winter teaches us something fresh, and very often, if we are not too obstinate, it upsets previous notions and conclusions which were arrived at with a good deal of attention and study. No two summers are exactly alike, and no two winters entirely correspond. Systems of working which succeed admirably one season are found to be utterly useless the next; and plants, flowers, and fruits lauded up to the skies at one time, and perhaps honestly so, are in the short space of twelve months consigned to oblivion. It is truly said gardening is never learned, but it is very hard for a young man to believe this, and it is only after many hundreds of failures that the truth forces itself upon us and we are obliged to confess how little we know.

Some correspondents of the Journal at one time complained that we did not record our failures, but were loud enough in proclaiming successes, and implied, I think, that professional gardeners as a rule wished the world to believe that they had no failures. Of course the reverse of this is the fact. I have no faith whatever in a man who has no failures, and I know that if I were to chronicle all mine the Editors would have to enlarge the Journal and shut out their other contributors, either of which would be a great calamity. I like the Journal in its present form, and hope it never will give way to the popular failing of cramming with mere verbiage which nobody reads, or everyday science and old women's superstitions, which everyone who desires it can get in a very cheap and more convenient form at the railway book-stalls. The truthful chronicling of doings by practical men of all grades is that which distinguishes our Journal; boasting, self-laudation, and coloured reports are almost unknown in its pages, and in this respect I think it improves every year. Whether this is owing to the Editors' scissors being sharper or the contributors getting better informed, and consequently more humble, I am not able to say, but I have no doubt whatever of the fact. Although there are two or three horticultural writers whose little dainties I devour most greedily and am constantly longing for more of the same stamp, yet even for them I would not have the Journal enlarged, for I have a very great dislike to large papers and long-winded articles, and one of the greatest punishments that could be inflicted on me would be to force me to read them till my head turned round like a windmill. If my head happened to be empty it might take a considerable time to bring about this result, but otherwise the process would be very short. I could have gone into mourning a short time ago when a certain energetic little evening paper suddenly blew itself like the toad in the fable, and its friends were no longer able to recognise it except by its title. Probably if it goes on expanding it will come to the same untimely end as the poor toad. But I am afraid I am doing the very thing I am denouncing. How

pleasant it is in imagination to hear oneself speaking without interruption to all the thousands of learners from the Journal of Horticulture, who with open ears and eyes catch every syllable! But, then, Robert Burns troubles by saying, "Wad some power," &c.

From poetry to Parsnips is not perhaps an elegant leap, but I have no room for further preface. Parsnips were sown on the 25th of March, and again in the middle of June. Those sown at the latter date were good, but not so large as desirable; the former lot were an irregular crop, badly forked, and only fit for pigs. I do not recommend either of these dates, but in my heavy soil I shall be quite contented to sow Parsnips, and also Onions, any time during April, provided the ground is in good order to receive the seed.

Of Celery I consider Major Clarke's Red very far in advance of every other Celery in quality, but it is so tender that it ought not to be depended on after November. Manchester Red (also known as Sulham Prize) is a useful late kind, but it will not do to taste it till the delicate flavour of the first-named is forgotten.

I have grown Witloof Chicory, but it has no advantage over the ordinary large-rooted kind, being exactly similar in flavour, and its jagged edges are no recommendation in the salad bowl.

Two years ago I ventured to recommend the Improved Round-leaved Batavian Endive, as supplied by the Messrs. Veitch & Sons (this is altogether different from Fraser's variety, and also the old Batavian), it now not only takes the place of all other Endives, but also for winter super sedes Cos Lettuces, as it blanches better and is much hardier. When Lettuces can be had quickly grown and thoroughly blanched as we have them in summer and autumn, Endive is not worth the trouble of washing; but in winter Lettuces are generally both green and tough, and will bear no comparison with well-grown Endive, and especially the sort named above. With a little really good oil and a sliced Tomato it makes, in my opinion, without any other admixture the best winter salad procurable. Tom Thumb Lettuce is grown for kitchen purposes, and is the best Cabbage Lettuce I know.

G. F. Wilson and Veitch's Perfection are still the best Peas for quality on a good soil. Dr. Maclean is not much behind them, and will probably be found very useful on soils which are not of the first quality. It is a very vigorous and handsome Pea of medium height, and is very productive. William I. is the best early if quality is wanted.

Early Horn Carrots were sown as late as the 10th of August on a south border, and are now grown to nearly their full size. They have never been protected in any way, and although we had frost on the 1st of November which seriously injured hardy evergreens, the Carrots were none the worse for it. I find them extremely useful.

Sir Joseph Paxton is still the best French Bean for forcing, and is as good as any other for outdoors.

Autumn Giant Cauliflower is especially valuable in hot summers. Having to be planted early it roots deeply

before the great heat sets in, and is consequently unaffected by it. It requires to be sown in a frame in February and March to produce heads in August, and it is in August that the supply of Canflowers often breaks down.

Globe Artichokes planted in May as usual supplied heads till the frost cut them off, and indeed some time after, for some were cut and kept fresh by having their stems placed in water.

Very little watering was done in the kitchen garden, excepting for Celery. Peas, Beans, and the like were kept sufficiently moist by having dry litter placed round them, and they continued bearing all summer; but then I must again remind my readers that my soil is heavy, and although it has its disadvantages, last summer suited it admirably.—WILLIAM TAYLOR.

TEA-SCENTED ROSES.

A MISERABLY wet Sunday, the twentieth in succession (about that number of people at church), and no signs of any improvement in the weather. Every body looking doleful and dragged. These are not very enlivening circumstances under which to write on the loveliest flower that grows, the darling of my heart—my queen, my queen, the Tea Rose. Oh, what a time it seems since I have seen one! although they are the most constant of all Roses and are the last to disappear from my garden. How I long once more to see a Souvenir d'Elise and a Marie Van Houtte, how how many weeks must elapse before I am gratified, as I have no glass and so cannot force them.

Two correspondents want advice on the cultivation of Tea Roses, and both, strange to say, hail from a land where the cultivation of those charming flowers is a matter of some difficulty. One writes from Leek, that rosy town in Staffordshire, where I had the pleasure at the last show of meeting such enthusiastic rosarians, and the other from I know not where; at all events his roseroy is situated 2000 feet above the sea level, so that he may be said to live in an exceedingly breezy atmosphere. I will give them both the best advice that I can; but at the same time think it only fair to say that I am not handicapped in the way they are. Although I am a wild man of the woods, my abode is in mild Dorset, three miles from the sea, just sufficiently far from the ocean to get the sea air blended and subdued by that from the land. Occasionally in the spring we suffer dreadfully from the sou'westers, but that is the only wind that hurts me. But I have a little vicarious experience of northern latitudes, as my brother grows Roses in Yorkshire under most depressing circumstances; for a pall of smoke ever hangs over his roseroy, and this lies so low and so near a running foul "heek," or stream, that he suffers terribly from spring frosts, so that I am able to advise on this subject better than I should otherwise be if my lot had always been cast in this charming climate.

My experience, then, derived from observing my brother's attempts, leads me to declare that Tea Roses cannot be successfully grown in the north, or under such circumstances as your correspondents describe, in the open air without certain precautions being taken. Here I never protect a Rose, and they never want it; of course a lot die, and so do Hybrid Perpetuals, but I do not think that the weather kills them. For a time I used to grow my Tea-scented Roses under a wall, but I found that only one side of the wood ripened, and that consequently the plants did not flourish; so I now grow them in the most open spot I can find, with, of course always, a south aspect. But if I lived at Leek I should have to protect my Teas and aid them in some way or other in their conflict with Jack Frost, Enrus, Fores, &c.

If your correspondents have glass I should recommend them to take up their Teas before the winter, say in October, pot them and place them in a cold house, and not transplant them till April. My experience proves that you may plant the Tea Rose much later than the H.P. Last spring, owing to some alterations, I moved all or nearly all of my Teas in April, and put some Manetti Roses in their places.

It certainly was very late to plant Roses, and I did not expect either would do much good. The Manettie, which were purchased from one of the leading nurserymen—about five or six hundred—all died, but the Teas did uncommonly well, and most of my show Teas were cut from those plants; certainly those which won the first prize at the Aquarium were. My old man shook his head when he saw these Teas moved into the kitchen garden, and prophesied that we should do nothing with them this year; but as soon as genial weather set in they started and put forth a lot of healthy fresh wood and bore fine blooms and also (which was of the greatest

consequence to me) the blooms came about three weeks later than they would have done if the plants had been left in their original place, and so I was enabled to cut Teas for all my stands throughout the show season. If, however, your correspondents have no glass they must protect their plants in some way or other. Mr. Reynolds Hole recommends fronds of Ferns to be placed among them, or even straw could be wrapped round the stems, or screens of wood could be placed near them so as to break the force of the wind. Now, I am aware that the general custom is to prune the Tea Rose very slightly indeed, but such is not my plan. I cut my Teas as hard as my Hybrid Perpetuals, but I cut them much later.

The end of April even here is not too late to prune the Tea Rose, and in Staffordshire I should say that the middle of May would not be too late. My brother has found that unless he prunes very late indeed he cannot get a good bloom. Let, then, the weather do its worst; be patient if you can, and wait till the sun is so high in the heaven that severe frost is no longer to be feared, and then cut hard. Go down to healthy wood, even if you have to cut all your tree away and leave only a small stump, it is the only way. Badly ripened or frost-bitten wood is like a cancer to the Rose, it cannot possibly put forth healthy shoots. It must be cut out. I have a firm conviction also, that if your correspondents were to lift the Teas and examine the roots and replace them either in the same soil, or in fresh soil, about April, that they would do a wise thing.

I have given the results of my own experience, and no man can do more. I may be wrong, and very likely numbers of your readers will say that I am wrong, and perhaps some will write to you and say so. I hope they will, for nothing pleases me more than a man to tell me that I know nothing whatever about the subject of Roses, in the "Rose Journal," for then we can have a spirited set-to in print, like we did about the Rose election, and the Rose public at least will benefit, if there is any truth in the proverb "In the multitude of counsellors there is wisdom."

Now as to sorts likely to do well at Leek, that is a rather difficult matter. There are certainly some sorts which will not flourish, or which at least in my opinion it would be mere folly to attempt to grow. I do not think Cloth of Gold could succeed in the open air there, nor do I think Reine de Portugal or La Boule d'Or would do; but I am positive that the best of all Rosas (Tea and every other kind), Marie Van Houtte will do well. She is so robust, she has such vigour of constitution, she is such a darling in every way, that I feel sure she would do there. She grows stronger here than any Rose I have. I had visits from the proprietors of several Rose nurseries last summer who wanted buds of Marie Van Houtte, and I was able to cut great shoots like you would from a strong climbing Rose without injuring the trees. Souvenir d'Elise, Souvenir d'un Ami, Niphotos, Alba Rosas, Devoniansis, Souvenir de Paul Neron, Madame Willermoz, Rubens, Catherine Mermet—these, the best of the Teas, would in my opinion do, provided that protection was afforded them in severe weather, and great care and attention all the year round.

I shall be most interested to hear in the course of the year whether your correspondents have acted on this advice, and what the result has been. Of course I may be mistaken and the result may be a failure, but if so let them remember before they condemn me that I have given them the best advice I could; I have told them my own plan, explained to them my treatment of Teas, kept nothing back, shown my whole hand, and most sincerely do I wish and hope that they may succeed in growing the loveliest daughter of Flora's court, the Tea-scented Rose.—WYLL SAVAGE.

CHENOPodium BONUS-HENRICUS—MERCURY.

The following is in reply to a question in reference to the "Lincolnshire Mercury."—I can answer for the fact that this plant is largely grown in the cottage gardens of Lincolnshire. I cannot name one in particular out of the hundreds of beds of "Markwery" which are established in many villages, but there they are, and their produce is much prized by their owners, Mercury being regarded as their "first spring vegetable." This vegetable can scarcely be said to be cultivated, for, as a rule, it receives no care or assistance beyond an occasional sowing with sea-peas. It is seldom found in the gardens of the nobility, clergy, or gentry, from whence it has been driven away by the more aristocratic Spinach, Mercury being a plebeian vegetable. The Chenopodium, which is popu-

larly known as "Everlasting Spinach," is a plant of extreme hardiness and great endurance, and I am particularly acquainted with beds which have continued yielding produce for more than a quarter of a century without once having been dug up and renewed. More than once have I endeavoured to persuade the humble owners of Mercury of the superiority of the garden Spinach (*Spinacea oleracea*); but invariably after a "boiling" of the latter they have clung more tenaciously to the former than before, and I am not sure that they are not right in doing so. Mercury is a firmer vegetable than Spinach, and its flavour is agreeable. It is in use very early in the season, and is extremely productive, requiring next to no care to produce a supply. Beds are established by planting crowns during the winter, dibbing them in about 6 inches apart, when they continue to push up their growth yearly with the persistency of Dandelions or Bindweed. The *Chenopodium* is a very useful and wholesome vegetable, and is well adapted for cottage gardens.—A LINCOLNSHIRE GARDENER.

LOOKING FORWARD.

THE new year is opening before us, and we are looking forward hopefully, trustfully, and I would fain add patiently, for those of us having much tree and shrub planting on hand have need of patience in such an exceedingly wet winter. Not that we are content to sit down and wait for better times, far from that; we will never forget while looking forward that the present time is always the best time to do all we can in, not only for the present but also for the future so far as is possible; and so now while the planting must remain in abeyance, we are pushing on all such work as Vine-dressing, pruning, potting, and training plants, cutting shreds, labels, and flower sticks, sharpening pea-houghs and stakes, repairing and painting garden frame lights, making shallow boxes for cuttings and seeds, repairing netting, pot-washing, and, in fact, doing everything we can to prepare for the coming spring and summer, to both of which seasons, but especially to spring, I must own to looking forward with considerable anxiety and great expectations, for fruit trees of all kinds are so full of promise, the firm well-ripened wood being so abundantly furnished with blossom buds, that with a favourable spring, and especially after so much rain, it is reasonable to anticipate a summer of more than ordinary abundance. Vegetables and flowers may also be expected to be somewhat above par in well-drained soils, through which the almost incessant downpour has soaked with as much rapidity as it fell, leaving behind it a most precious store of wholesome, purifying, nourishing salts. Let me call the attention of such persons as have a saturated undrained soil to this important fact. All should know and understand clearly that the effect of drainage is something more than to afford a ready passage for superfluous moisture, the free unclogged soil having power to absorb and retain the nourishing salts which rain water has been proved to contain.

Perhaps the thought concerning the future in which most of us share, is regarding the effect of so mild and wet a winter upon the coming spring and summer. From the published tables of the Royal Observatory, Greenwich, extending over the greater part of a century, I find that several hot summers have been preceded by warm winters. It by no means follows that such will be the case this year. On the contrary, a cold ungenial season may follow, as was the case in 1853. Mr. Prince in his valuable book, "The Climate of Uxfield," says that "the heavy rains of 1852 and January, 1853, saturated the earth with moisture, and as the temperature of December, 1852, and January, 1853, was unusually high, vegetation during these two winter months was kept in a very warm and moist condition, which rendered it the less able to withstand the cold weather which prevailed in February, March, and April, the temperature of even the latter month scarcely exceeding that of the previous December." I hope this quotation will be regarded as "a word to the wise," and that we shall all be on the alert to see every means at our disposal to protect tender plants in the severe weather which will very likely occur before summer smiles upon us once more.

Another matter to which I am looking forward is the better management of open Vine borders in summer and autumn with the view of keeping Grapes really well. Never in my experience has there been a more trying time for Grapes hanging upon Vines growing in exposed borders than that which we experienced after the hot dry weather of last July and the early part of August. The pouring rains saturated the outside

border, and caused the sap to flow with such vigor and abundance as to burst the skins of all such delicate kinds and Madresfield Court Muecat, in many instances ruining the entire crop. It is true that something may be done to prevent the mischief by cutting the branches partly asunder, and, as Mr. Taylor has told us, in the manipulation of the foliage; but neither of these plans possess the merit of thoroughness, and it appears to me that, upon the principle that prevention is better than cure, a suitable covering for throwing off the rain must be used. I have seen and admired glazed coverings, such as Mr. Walker has at Dunorlan, and consider them quite the best for the purpose, and when made as he has them, in the form of ordinary frame lights, they can be applied to a variety of useful purposes besides. Failing these, there are many makeshifts answering this one purpose very well, such as felt stretched upon frames, and thin feather-edged boards overlapping each other, and temporarily pinned upon rafters to prevent mischief from high winds. Whatever may be the form or material of the covering, now is the time to prepare it, so that when the full flow of summer work is upon us all may be in readiness for prompt and timely use.—EDWARD LUCKEYBURN.

NOTES FROM MY GARDEN IN 1876.—No. 1.

NEITHER the size of my garden nor the excellence of my culture entitle me to say much about it, but it is perhaps because it is a type of very many possessed by the readers of the Journal that I have received so many expressions of interest and wishes that I should not discontinue my "notes;" and then I receive from time to time many novelties, or so-called novelties, on which I am asked to give an opinion, that I find it preferable to do so in this form rather than by writing special notes about them.

I was going to write that the season was an exceptional one, but then it struck me that we have not had anything but an exceptional season for a long time past. The years seemed to have forgotten quite how to behave orderly. The weather proverbs of old time, which no doubt had some foundation in fact, are entirely out of date. All out-of-door work has had to shift as it best may, and calendars of operations are only approximately correct. Thus, when we in these regions experienced that tremendous fall of snow in December, 1875, we congratulated ourselves, when our roads were blocked up and neither butcher nor baker could get near us, that we were having a real old-fashioned winter and that we should have a genial and pleasant spring. But, then, we had no spring. We were deluded into the notion that it was coming, and then came a sharp and nipping frost, or another fall of snow, or cold biting easterly winds, and this continued on until June, and then all at once we jumped into summer; and then came a broiler. The cold winds of May had prevented the growth of many things; and as they were dry at the same time, when June came there was a deficiency of grass, and in our gardens water became a prime necessity. After the drought had ceased we had some wretched weather in September, to the infinite disgust of sportsmen. The early part of October was indeed fine, but since then what a deluge! Bulbs still in their paper bags, Roses heeled-in, shrubs not moved, and the whole land either soaking like a sponge or sticky like a pudding, and so wet that neither spade or fork can be used in it. Yes, certainly it was an exceptional season. I have just (January 11th) cut a lovely bud of *Réve d'Or* Rose, which has opened in the house and is as good and perfect as in June, and there are plenty more on the tree. But then, shall we not pay for all this? And as one sees the swelling buds visions of late frosts come before our eyes; and nipped shoots of Potatoes, and fruit blighted, and flowers stripped of their beauty form no pleasing outlook for the gardener. By-the-by, in writing of our prospects in horticulture last week I spoke rather dependently of our big shows, and this week's papers unfortunately add a deeper shade of colour to this; for I see that the magnificent collection of plants of good James Cypher of Cheltenham, which have been a pride and glory of many of our provincial shows, notably Manchester, Bath, Cheltenham and Taunton, are to be sold; and that, owing to the death of Mr. Wilkins, the fine collection of specimen plants which have been quite a mainstay of our metropolitan exhibitions under the care of Mr. Ward, are to be dispersed.

And as I have mentioned Potatoes, suppose that my first notes are on this favourite root, so much valued and praised, but which, owing to the ignorance of cooks and the prejudices of mistresses, one seldom eats good. I have become pretty well

tired out of novelties which come with high-sounding claims of recognition, but which after trial one is obliged to put on one side in place of older and perhaps deeper varieties. Of new kinds this year I had only Porter's Excelsior, Bennett's Schoolmaster, and Sutton's Magnum Bonum. I do not include amongst new ones such varieties as Snowflake, Rector of Woodstock, &c. With regard to the latter Potato, I have been reluctantly compelled to discard it. It is not in this locality prolific and is delicate. I know it does not bear this character in other places, but I can only speak of it as I find it. I have now tried it for three years and with the same results, so I am reluctantly obliged to give it up. On the other hand, Snowflake has still further confirmed me in the good opinion I had formed of it. Although the season or this soil was against it, yet the produce was large in quantity and most excellent in quality. It is indeed, as far as my own experience goes, the only one of the American Potatoes worth growing: it shares their general quality of productiveness, and is devoid of that unpleasant flavour and close grain which the others, to my mind, possess. Porter's Excelsior, received from the Messrs. Carter, I found to be a very handsome Potato and prolific, always a favourite on the exhibition table, but I cannot say that it possesses the quality of flavour and texture that suit my notions of what a Potato ought to be; but then this is a matter of taste. A neighbour of mine thinks the Lapstone flavourless, and does not like a Potato that crumbles to pieces when you cut it. Bennett's Schoolmaster, received from Mr. Turner and sent out by him, is certainly a very handsome, prolific, and good round Potato. The produce was fairly good, and the quality quite equal to most of the Potatoes of the same section. In foliage it resembles some of the American varieties: the tubers are large, skin white and rough, shallow eyes, and the flesh white. It is apparently a seedling of the Regent and Victoria types, and is probably a combination of both of those excellent sorts. Mr. Turner does not send out a host of things, but when he does issue a novelty we may be sure that it is something reliable. Magnum Bonum, received from Messrs. Sutton & Sons, Reading, is a kidney Potato of great excellence. Its productiveness may be gathered from the fact that at the Reading Exhibition the gardener of Major Thoyts exhibited 267 lbs., the produce of 1 lb. of seed. The Potatoes were all of good size, there being very few small tubers amongst them, and its quality is excellent. I do not think it equal to the Lapstone, but then I do not think any Potato is. With regard to older kinds, my growth consisted of Myatt's Prolific, still to my mind the best of the early Potatoes, Regents, Lapstones, Yorkshire Hero, and Victoria. To this list I see no necessity of adding. I shall gladly give a trial to new sorts in small quantity, but on those named, with Snowflake, I shall rely for my crop.

And here let me say I, *ex animo*, endorse all that my old neighbour Mr. Luckhurst has said on the subject of early lifting, and have had this year stronger confirmation than ever of its value. It is very difficult for our cottagers to dig their Potatoes up until after hop-picking is over. But wherever my advice had been followed there the Potatoes were and have kept sound, but when lifting had been deferred until the end of October, as, indeed, I have been recommended by some writers, then disease or second growth had done its work. I am now eating Victorias which were dug up when the tubers rubbed, and some people, I have no doubt, thought me a wee bit crazed; but the tubers have kept well, are mealy and well flavoured, and fully vindicate the practice. But it is astonishing how long it takes to kill some things, and this is one of those deeply rooted prejudices which seem too firmly established to readily give way; and as long as writers encourage the notion that it makes no difference whether Potatoes are left in the ground or not, so long the practice will continue. And although my opinion may be taken for little, the trenchant character in which Mr. Luckhurst disposes of the matter will, I hope, do much towards the desired end, for it is a great pity that so large a portion of a valuable crop should be destroyed by holding to old-established practices which prove to be wrong.—D., Deat.

GLOIRE DE DIJON ROSE.

In your last week's issue your correspondent, "J. B." inquires if there are two varieties of the Gloire de Dijon Rose. In reply I beg to say that the description given corresponds with the *Tea Madame Berard*, which is of luxuriant growth, red wood and foliage. The blooms are small and of a beautiful

salmon colour, and considerably more cupped than the former. I purchased a plant of Mr. G. Paul some years since, which has furnished me with some exquisite blooms for our local shows and at the same time called forth the admiration of many visitors.—RICHARD TAPNER, *Crouchurst, Battle.*

THE CARROT.

This is one of the most common yet the most difficult to manage of culinary roots. The farmer can grow it by the acre and sell it by the ton, yet gardeners can scarcely grow as many as will supply their employers' table. Not for want of cultural skill, but from not being able to cope with what is known as the "maggot." It has been my only enemy for years. I have tried experiments, watched the Journal, and practised the most feasible preventives there set forth, including McDougall's non-poisonous "sheep dip"; still all to no effect.

Last spring I sowed Early Scarlet Horn (as I was advised) in an Onion bed, also a few in a prepared bed made of imported soil. Towards 1st of August in the latter the "maggot" began its attack, and soon accomplished its mischievous mission. The former I did not let have all their own way, for about the same date I pulled all the largest Carrots, which were about two-thirds grown, cut off the leaves about 2 inches from the crowns, packed them in a heap outside, and covered them with bog soil (moss stuff); but sand or leaf soil would answer the same purpose.

They have kept perfectly fresh, sweet, and clean from the "maggot." I let a few remain in the bed, and some weeks after they were totally destroyed by "maggot." As it is pretty generally admitted that it is almost impossible to have clean Carrots in old wrought-out gardens under ordinary circumstances, the above is worth trying, which at any rate will give a fair supply through the greater part of the winter months, not to mention the autumn, when Carrots are expected and are not always to be had. Others might record their experience—failures as well as successes. Failures serve as red lights to warn, but successes often mislead the young amateur, filling him with enthusiasm without means or opportunity to experiment.—B. G., *Co. Down.*

CHRYSANTHEMUMS FOR NON-EXHIBITORS.

MR. TAYLOR'S mode of culture (see page 25) may meet with its advocates, but I, for one, fail to see the force of his argument that "the expense incurred to grow them as they are grown for exhibition" deters numbers from growing this grand autumnal flower, and that the expense is "ten times" the amount required to grow the plants for exhibition than in growing them for home decoration. The Chrysanthemum is so easily struck and so easily grown that it is everyone's flower—a real amateur's flower—and owes its improvement mostly to amateurs, and the only necessary appliance or convenience required to grow it to perfection is a cold frame and some place of shelter from frost and rains when coming into bloom.

With these conveniences at hand we will suppose the lover of this flower has some old stools which have done blooming. What are to be done with these cut-down old plants from the time of going out of bloom until the "last week in May?" Attention, time, and "expense" are required to preserve them; therefore where is the great difference in "expense" between taking cuttings as soon as ready and throwing your old plants away, thereby reducing your stock to a minimum, and having your pots wherein they bloomed at your disposal for growing many other plants? If Mr. Taylor could assure finer blooms apart from the "expense" I would give his plan a fair trial; but with early-struck plants the cultivator has the assurance of well-ripened wood, without which it is impossible to obtain the desired "perfection of bloom and as large as Dahlias." Apart from this the uninitiated in the culture of Chrysanthemums are more likely to err on being driven to so short a time than if a longer time were advised for the encouragement of root-action and the maturation of the wood.

Mr. Taylor's treatment of twice stopping is very good and worthy of imitation, and has been practised by Mr. Turner of Slough and other cultivators, but this stopping should not be performed later than July with many sorts. Small plants are sometimes propagated as late as August, but these are not expected to carry blooms as large as Dahlias." Again I say to those who have a wish to grow the Chrysanthemum, whether for home decoration or exhibition, put in your cuttings as

soon as they are ready, and when you have taken as many as are wanted throw away the old plants if not required, and for the small cost of growing the young plants from now till May you will be more than compensated during the dark and foggy days of November.—J. W. MOORMAN.

FLOWERS WORTH GROWING FOR CUTTING.

Ageratum Imperial Dwarf.—Lavender, half-hardy annual. Seed should be sown in a hotbed in March, the seedlings potted-off singly in 3-inch pots when large enough to handle, and be grown-on near the glass in gentle heat, hardening-off thoroughly before planting-out in May. The soil requires to be rich and light, an open yet sheltered position, planting three rows in a 4-foot bed, or plant in rows 1 foot apart, omitting every fourth row. Water freely in dry weather, and occasionally with liquid manure after the plants commence flowering. 18 inches.

Aster.—Victoria and Improved Pæony Perfection, those being best had in collections, or if only a few are wanted mixed packets will serve. If but one kind is wanted the Victoria is very much the best; and of the Dwarf Bouquet the Boltze Aster is superb. Sow in March for early bloom as described for *Ageratum*, and for a late bloom early in April in a cold frame, keeping close until the plants just show through the soil, then admit air freely, avoiding frost. The plants will be very stocky, and should be planted-out late in May or early in June. The Victoria and Pæony Asters should be planted in rows 18 inches apart, omitting every third row for an alley, and the Bouquet Asters in rows a foot apart, omitting every fourth row. The soil can hardly be too rich for these plants, and the plants are the better if mulched with short manure, and have weak liquid manure after they "button."

Centaurea Cyanus major.—Various-coloured, mostly blue and white, or light shades of colour; one of the finest of all cut flowers. Hardy annual. Sow during early April in light rich soil in an open yet sheltered situation in rows a yard apart, thinning-out the plants to 6 inches apart. I like a double row, the rows being about 6 inches apart, and the plants that distance in the rows. The dwarf—i.e., minor, is not nearly so good as the tall variety. Sow early in September in a sheltered border to stand the winter for early summer bloom. 3 feet.

Chrysanthemum.—C. Dunnettii flore-pleno (double white), C. Dunnettii aurea (double golden), and C. carinatum hybridum flore-pleno (various-coloured), are useful hardy annuals. Sow in March for early bloom in gentle heat, treating the same as Asters; and sow out of doors early in April in rows a foot apart, thinning the plants to 9 inches. 2 feet.

Marigolds.—These are neglected for cutting. Why? They really are very beautiful. The great African Orange and Lemon Marigolds are really superb by candlelight when arranged with the feathery spray of *Colecia pyramidalis* coccinea or dark Fuchsias, whilst the Striped French Marigolds have the finest marking. Sow during early April in gentle heat, keeping near the glass to prevent the seedlings from drawing, potting-off singly or pricking-off in pans or boxes 2 or 3 inches apart, sowing well so as to have stocky plants well hardened-off by the middle of May. They like good rich soil and the distances mentioned for Victoria Asters are suitable. 2 feet.

Mignonette.—Large-flowered Pyramidal (*Reseda meliorata gigantea pyramidalis*), surpasses all others. Sow on a warm border in March for early bloom, or in pots, planting-out in May after hardening the plants well off, and early in April sow in drills 18 inches apart, thinning the plants to 9 inches apart. Mignonette likes a free, open, rich soil. I sow mine in borders like Parsley. Enough seed may be had for a shilling to form a row more than 100 yards long 18 to 24 inches wide, no plant for the money affording so good a return in delicate fragrance.

Sweet Peas.—These are unquestionably unapproached by any annual for cutting, for which purpose they are best grown in separate colours, but for effect the colours should be mixed. It is surprising what a quantity of flowers a row 20 yards long will give, and everybody should have a long row of these Sweet Pea blooms. For early flowering seed may be sown in pots or on reversed strips of turf and grown in a cold frame, planting-out in April or early in May in a warm situation, sowing outdoors early in April, and for succession early in May. They require sticking like edible Peas, and grow 6 feet high. Afford them rich soil, and liquid manure after commencing flowering.

Phlox Drummondii.—It is best to obtain a collection, the

colours are very rich and varied, and the flowers are very durable in a cut state. Sow in March in gentle heat, pricking-off in pans or boxes about an inch apart, hardening the plants well off before planting-out during May, in an open situation in light rich soil, the rows to be a foot apart, omitting every fourth row. Water freely in dry weather. 18 inches.

Scabious (Double Dwarf).—The colours of the flowers are rich and showy, and possess a delicate fragrance. This old plant, especially in its newer dwarf form, is not nearly so common as it deserves. It is also very enduring in a cut state. It is a biennial, and may be sown in June outdoors in an open situation, pricking the seedlings out in a sheltered place during September, and planting them out in spring, or they may be left to flower where put out in late summer; but it flowers the first year grandly if sown in March in gentle heat, the plants being hardened-off before planting-out in May. I have sown in a cold frame in early April, and had good plants to put out in May, flowering finely in August until severe frost. They require the distances named for Victoria Asters. Scabious ought to be in every garden.

Stocks.—Large-flowering German Ten-week, secure a collection and sow in March in gentle heat, pricking-off the plants when large enough to handle; but they will repay potting-off singly in small pots, and after being hardened-off planting out in May in rich soil. The rows should be a foot apart, omitting every fourth row. They will bloom splendidly in July. Sow again early in April in a cold frame and plant out at the end of May or early in June, and they will bloom in August and continue until frost. Intermediate Stock is best represented in Eset Lothian, purple, scarlet, and white, which should be sown in July or early in August, established in pots before winter, wintered in a pit or frame with protection in severe weather, shifting into larger pots in February any which are intended for greenhouse decoration, planting out the remainder after the weather becomes mild. For late summer sow during March in gentle heat and plant out during May. The soil for Stocks should be rich and light.

Sweet Sultan, purple, white, and yellow, yields sweet and showy flowers. It should be sown in rich light soil early in April where the plants are required to flower, in rows 18 inches apart, the plants allowed to stand in a double row about 6 inches apart, 2 feet. Sow in early September for early flowering—in fact, autumn sowings give the finest flowers.

Wallflowers.—Harbinger is the earliest variety, flowering finely in autumn from seed sown in March or early April, and continuing through the winter when mild. It is a brown or reddish brown. Belvoir Castle, dwarf yellow, is very floriferous, and it with Blood Red will meet every requirement in the single-flowered section, and of the double German varieties a collection must be obtained to secure good flowers. Sow in May or early in June, pricking-off the seedlings when large enough to handle in rows 6 inches apart and that distance between each plant, and in September take out every other row and every other plant in the rows left, and plant a foot apart where intended to flower. The soil for Wallflowers should only be moderately rich and the situation sheltered, the ground being open in character though firm, so as to induce a stiff well-ripened growth, for when the soil is rich and loose the plants are so succulent as to be cut by frost.

Branching Larkspurs give a number of side shoots that are very useful, especially the blue or purple shades of colour. Sow during early April in an open situation in rows 2 feet apart, omitting every third, thinning the plants to 6 inches apart. 2½ feet. Sow in September for early summer cutting.

The Perennial Larkspurs or *Dolichnum* if sown early, or during March in gentle heat and the plants pricked-off 2 inches apart in pans or boxes when they show the second leaves, and grown-on, hardening well off and planting out during May in rich soil in an open situation 18 inches apart, will flower in late summer, and being mostly blue shades of colour are very desirable. 3 feet. The French hybrids are very good, a packet usually giving some variety. *D. formosum* is fine, and *D. nudicaule* (scarlet), *D. chinensis* (deep blue), and *D. grandiflorum* celestinum (sky-blue) are all worthy of cultivation.

Rockets are very free-flowering and sweet. The purple (lilac) and white are good, but the brown or sweet (*Hesperis tristis*) is most perfumed. Sow in May or June outdoors, pricking the plants off when large enough to handle, and plant out during September 18 inches apart in light soil. 2 to 3 feet. They flower in early summer.

Jacobaea (*Senecio elegans*) in double crimson, lilac, purple, red, and white, give an immensity of flowers which are often

very useful. Sow in March in a hotbed, prick off the young plants 2 inches apart in pans or boxes, hardening well off, and plant out in May 18 inches apart, omitting every third row. Many others besides the preceding I have known improvised occasionally for cutting, such as *Tropeolums* of the Lobbianum section, as Brilliant, Glory, and Elegans. They are easily raised by sowing in gentle heat in March, potting the plants singly and planting out after hardening well off in May, supporting with stakes or trellises, the plants also doing well on rockwork, banks, &c. I shall close by mentioning Zinnias, which are useful, requiring the treatment of Asters.—G. ABBEY.

NOTES AND GLEANINGS.

EARLY in the week the barometer was higher than it has been for many months past, and sunny days have at length arrived. The nights have been frosty, but in the neighbourhood of London the frost has only been slight, sufficient to check advancing vegetation without doing any injury. The ground has dried rapidly, affording an opportunity for bringing up arrears of garden work, and the bright days have been of great benefit in the forcing department. We have several accounts of Vines "breaking weakly," a circumstance due probably to a deficiency of light, and brighter days may be expected to bring general improvement.

A YEAR ago we noticed that Mr. Wills was appointed fiscal manager of the ROYAL WESTMINSTER AQUARIUM AND SUMMER AND WINTER GARDEN SOCIETY; we have now to announce that he has relinquished that position. For a long time the "aquarium" was without fish, but the "garden" has never been without flowers; nor have the plants used been merely showy plants of little value. The plants for permanent effect have been introduced at great cost, such as Tree Ferns, Palms, Mosses, &c., while flowering plants have been employed in great numbers and of superior quality. Mr. Wills continued his duties worthily until the last day of his term, on which day he rendered the great hall attractive by tastefully-arranged groups of hundreds of Hyacinths in separate colours, Tulips, Narcissuses, Primulas, Lilies, Echeveria retana, &c., the colours being divided by bands of *Lycopodium denticulatum*, which covered the undulated surface of the ground. On mounds and knolls were choice Palms and Pandanus, and the effect produced was excellent. The entrance hall, however, was not decorated; the dry air, and fringe of gas jets (for spectacular effect) had wrought such ruin to valuable plants that it was deplorable to witness. The plants which have suffered the most are Dicksonias, Cyces revoluta, Sessiforthias, and Lstania. Fine specimens of those are irretrievably ruined. A few which have not succumbed are *Aspidarias*, *Green Dracenas*, and *Pandanus utilis*; but unfortunately the plants which have cost the most have suffered the most, and their condition cannot but be viewed with regret by all who know the value of the specimens.

DURING last year Dr. Newington informs us that at Ticehurst, Sussex, there fell 33.95 INCHES OF RAIN, and that this year up to the 18th inst. 6½ inches had fallen.

AS an instance of the mildness of the weather and the FORWARD STATE OF VEGETATION we noted in Messrs. Charles Lee & Son's nursery on the 19th inst. a tree of *Pyrus sinensis* almost opening its blossoms, and on another tree of the same Pear some young foliage fully expanded. We also observed some young shoots of variegated Elms 5 inches in length. In some of the sheltered villa gardens near London bedding Geraniums are still not only alive but growing, having pushed shoots at the several joints of the old stems fully an inch in length. We noticed *Ceanothus azureus* flowering on a wall at Isleworth; and *Veronica Blue Gem* is still flowering freely in many gardens.

THE flowering sprays of *CHIMONANTHUS GRANDIFLORUS*, which were exhibited last week from the Royal Horticultural Society's gardens, were worthy of more than a passing notice. *C. fragrans* is deservedly popular as a hardy, fragrant, mid-winter flowering plant; but *C. grandiflorus* greatly exceeds it in the size of its flowers. The sprays referred to were covered with buff-coloured blossoms, and were highly attractive, while their Jonquil-like perfume was delicious. The *Chimonanthuses* are easily grown, but do not always flower profusely. To induce flowering the shoots should be thinly trained to a sunny wall, and the growths should be regulated by summer pinching. When the wall space has been covered, it is a good plan to dig up the plant and replant it, and the check it receives by that

operation is almost certain to accelerate its flowering. A plant of *Chimonanthus* should be in every garden where a sunny site is provided. A dozen of its modest flowers are sufficient to perfume a large room. Although the plant is quite hardy, a little protection is necessary during the flowering period if the weather at the time is severe.

A MEETING of the Committee of the NATIONAL AGRICULTURAL SOCIETY'S SOUTHERN SHOW will be held at the Horticultural Club, Adelphi Terrace, Strand, on Wednesday, January 31st, at one for two o'clock, to receive the report of the Sub-committee appointed to draft a schedule of prizes, and adopt or reject the same. A meeting of Carnation and Picotee growers will be held at the same time and place.

THE LATE STORMS and HIGH TIDES have done much damage in the neighbourhood of Fulham. Commencing at New Wandsworth Bridge, Mr. Steele, the market gardener, has suffered to the extent of some hundreds of pounds. Celery ridges were washed away, also large beds of *Sesalix* stacked ready for forcing. Radish beds, &c., were destroyed. Messrs. Veitch have suffered through their Peterborough Lane Nurseries having been under water. The grounds at Hurlingham House have also been entirely under water. At Mulgrave House, the residence of Lord Ranelagh, damage to the amount of £300 has been done. Breaches have been made in walls, &c. At Grass Bank, a pretty little place adjoining the Bishop of London's palace, is now a total wreck; the camp siding has been washed entirely away, and a large portion of the garden with it. Besides the damage done inside the house at Craven Cottage, a large and massive wall erected since the last high tides has been swept entirely away, with a conservatory adjoining. Large Elm trees have been blown down at the Bishop of London's, also the walk known as Bishop's Walk has been partly washed into the moat. The suffering of the poor of Fulham is intense. Several houses are vacated; in fact, the Board of Works considers them no longer fit for habitation.

AS to the hardness of *LYCOPodium DENTICULATUM*, inquired about on page 8, Mr. Luckhurst says "it has been established in the rock garden at Newick Park for so many years that the date of the first planting is unknown. The position is certainly sheltered by trees, but in a low and exceedingly wet valley like that there must be many degrees of frost in a severe winter, and which this *Lycopod* always withstands, the only perceptible effect of cold weather being the loss of its bright green hue, which, however, it soon regains in spring. "J. N." would do well to give this pretty moss another trial, planting several of it in different positions, and I have no doubt his efforts will eventually be crowned with success."

WRITING to us on EXHIBITING PEACHES, "A YOUNG FRUIT-GROWER" suggests that the fruit should be tasted and let quality have its due weight, the same as is the case with Melons and Grapes. Our correspondent remarks that "when Early Crawford Peach is exhibited its imposing appearance secures for it premier honour, and it receives in consequence a fictitious fame;" for with many growers, himself amongst the number, this Peach "is neither constant in producing a crop, nor is the fruit of high quality when produced." This suggestion is worthy of the notice of fruit judges, who do not, we believe, as a rule, taste the Peaches on which they adjudicate.

NOTHING is MORE EASY than to DESTROY MOSS ON THE BRANCHES OF FRUIT TREES. When the branches are wet fresh-slaked strong lime thrown freely amongst them will adhere and destroy every vestige of moss. This is far more effectual than using the lime as a wash—applying it with a brush. The lime falling to the ground is also beneficial. In all gardens where moss is prevalent lime should be annually dusted amongst the Currant and Gooseberry bushes and fruit trees after they have been pruned, and before the ground is dug, and cleaner branches, healthier trees, and finer fruit will follow. The lime is also useful in protecting the fruit buds from birds. A man will do more execution in one day in destroying moss by thus dusting with lime than will another man in a week with the "whitewash brush."

A FEW inches of partly decayed manure spread over the roots of fruit trees in autumn would do much toward preventing the MOISTURE FROM EVAPORATING and HEAT FROM ESCAPING. The cold wintry winds will dry out the soil as certainly if not as rapidly as the warm winds of summer, and a mulch would be a beneficial protector. Trees planted but one or a few years would be especially benefited by a mulch covering the roots from the trunk outward. We would mulch to prevent the

escape of heat as well as moisture from the soil. If an animal is ever frozen, it is because of the escape of heat from its body. The human body we cover with warm woollen clothing in winter to prevent the too free escape of heat. Nature clothes the brute with hair, fur, or feathers, which grow longer and thicker in winter than in summer, thus securing his comfort. When we see how much nature has done to prevent the too great reduction of the animal temperature, may we not take the hint and do something to prevent the escape of heat from the soil in which is embedded the roots of trees and plants?—(Rural Home.)

M. MOUILLEFERT, a professor at the School of Agriculture at Grignon, has been making experiments for the purpose of determining what agent was the most practically applicable to the destruction of the PHYLLOXERA. After trying many substances it was only with some of the sulphur compounds that really satisfactory results were obtained, and it is to M. Dumas, the permanent secretary of the French Academy of Sciences, that the credit is due for suggesting the employment of the alkaline sulpho-carbonates of potassium and sodium and those of barium and calcium. All the other remedies tried were either without effect on the Phylloxera, or, in destroying it, also destroyed or damaged the Vine. But the task of eradicating the Phylloxera has by no means been accomplished by the mere discovery of the value for the purpose of these substances; there is the further difficulty of applying them to the Vine in cultivation. One thing seems very certain, that in order to render the sulpho-carbonates practically efficacious in killing the insect, it is necessary to use water as the vehicle by which they may be brought to all the underground parts of the plant, and that the best time of year for their application is the winter or early spring, when the earth is still moist and the quantity of water necessary to be brought on to the ground by artificial means is consequently less. The conclusion at which M. Mouillefert arrives is that the efficacy of the sulpho-carbonates is proved, and all that is necessary is to bring to perfection their employment in agriculture, which can only be accomplished by the intelligence and practical knowledge of the Vine-grower, who is well able to discover the economic processes of culture which are conducive to their successful application. He ends by saying that "Science has accomplished its mission, and it remains for Agriculture to fulfil its part" in the eradication of the Phylloxera from the vineyards of France.—(Nature.)

THE ROYAL HORTICULTURAL SOCIETY'S GARDENS.

We copy the following from the Times:—

The Royal Horticultural Society has recently suffered so much from untrue statements damaging to its reputation, that I trust you will permit me to state in your universally-read columns what its actual position is.

1. It is a chartered corporation, of which the members—*i.e.*, the Fellows, cannot as such incur any personal liability beyond that of paying their subscriptions while they continue Fellows.
2. Its debentures are a charge on its surplus income after payment of its expenses only, do not attach upon any of its property, and do not constitute a debt. Of debts for which its property is liable it has none, and it has long since met all its engagements in respect of prizes and medals.
3. It has never ceased to do, and is now doing, good practical work for the advancement of horticulture at its Chiswick Gardens, as its published reports testify.
4. The Council have determined to continue the South Kensington Gardens on their former footing, and to make them as attractive to the residents in their neighbourhood and of London generally as the means and nature of the Society will permit. They have extended the privileges of their Fellows, and, subject to the approval of a general meeting, have determined to remit for the present entrance fees on election or re-election of Fellows.
5. If the subscription income of the Society for next year be raised to £10,000, the South Kensington Gardens will be secured to it certainly until 1892, to the great advantage of the residents and owners of property in their neighbourhood. If such income be not raised, those gardens will pass into the possession of the lessors, and probably be built over.
6. To place the Society in a more prosperous and secure position than it has ever occupied, nothing more is wanting than, for the present year, a renewal of a part only of the subscriptions which have recently been discontinued, and for the coming year an effort which wealthy South Kensington would scarcely feel, and which will raise the £10,000 above referred to.

I would therefore ask all who wish to preserve the gardens, and all who love horticulture, to lay aside their unfounded distrust of the future of the Society, and, forgetting old quarrels, to join in making it stronger than ever. The Council are trying, so far as their funds will allow them, to meet the wishes of their London Fellows. The principal western entrance has been reopened; the gardens, which have suffered nothing that a few days' labour will not repair, are being put in order; and the bands and promenades in the conservatory will be resumed on an early date.—Your obedient servant, ROBERT HOOD, Secretary, Royal Horticultural Gardens, South Kensington, W., Jan. 18th.

THE ORIGINAL WELLINGTONIAS IN ENGLAND.

In company with that first-class rosarian and well-known horticulturist, Mr. James Walters of Exeter, I have to-day been to see the Wellingtonia mentioned by your correspondent J. W. Moorman, in your paper of January 11th. As Mr. Walters was with old Mr. Veitch when the first seed was germinated, and recollects the fact well, he had no difficulty in pointing out the tree to me, though he could not recollect the date (probably from 1855 to 1858). The tree is not in first-rate condition, nor can it be called a first-class specimen. As the sun was not shining at the time I had a boy to climb the tree with a cord, which he drew tight when he was within 1 foot from the top, and I have thus ascertained the height to be 14½ feet, the girth of the trunk immediately above the bole was 10½ feet. The tree grows in a somewhat confined place, consequently the circumference of the branches is not large. I have observed in many other specimens that when the tree is planted amongst other trees it runs up with not much greater breadth than a Lombardy Poplar.

In the same grounds (Mr. Lloyd's, Mount Radford, Exeter) Mr. Walters pointed out to me another tree of the same kind, and even more interesting than the last. It is the original plant brought over by Mr. Lobb from California. For many years it was grown in a tub, and consequently, I suppose, has not attained the size which might have been expected. I took its dimensions also. Favoured by a bright gleam of sunshine I measured the length of its shadow and that of my stick (exactly 1 yard long), and the result of my calculation was that its height was 31½ feet, but its circumference was 8½ feet, and a more perfect cone and a more magnificently furnished tree I never saw. Its verdure and perfectly healthy appearance were equally remarkable.

In respect to height there are in this neighbourhood many higher Wellingtonias, notably some in Eggesford Park and some in Credeney Park (Sandford), but I have seen not one which can compare in beauty with the original plant imported by Mr. Lobb.—SENEX CORVICUS.

ECHEVERIA RETUSA.

AMONGST all the species of Echeverias there are very few can equal this as an exceedingly useful greenhouse plant, and if cultivated in quantity so as to come in bloom at the present season it is doubly valuable.

It is of easy culture, being within the power of anyone who has a small greenhouse. It is best propagated by cuttings in the spring, and then grown-on in the summer, so that the plants may be well established before autumn, and they will soon show flower when introduced into the greenhouse. I use a mixture of loam, leaf soil, and lime rubbish, and some charcoal dust—a compost which the plants luxuriate in. I have some plants now in bloom in 8-inch pots with twenty principal flower stems, and numbers of smaller plants in 5 and 6-inch pots with from four to eight stems on each. It is extremely useful for cut flowers, and will last fresh and good for weeks.

I find an easy way of growing dwarf plants is to propagate early in the spring, and plant them out at the end of May on a place well exposed to the sun, and the plants will take care of themselves until autumn, when they must be taken up with balls and potted before the frost injures them.—J. A. Hill Grove.

P.S.—I enclose a flower of the Eucharis amazonica. The tubes of the two flowers are attached to each other, yet each flower is fully furnished with all the organs of fructification. There were nine spikes of bloom on the plant growing in an 8-inch pot, and there is from four to five flowers on each spike, making an aggregate of about forty flowers. It is a magnificent white flower for the dull winter months, and if the blooms are cut when fully developed they last a considerable time in water.

The culture of this beautiful Lily has been fully described in your pages in previous numbers.

SCHIZOSTYLIS COCCINEA.

CRIMSON SCHIZOSTYLIS.

This plant has been frequently mentioned during the past year. It is thus noticed in the "Botanical Magazine." It seems



Fig. 8.—Schizostylis coccinea.

to have been first flowered by Messrs. Backhouse & Son at their nursery at York in November, 1863. It inhabits eastern rivers of South Africa, called Kabonise and Keir-kamma, in Kaffirland. Dr. Harvey possesses specimens of the same plant gathered by Cooper near Drakensberg Mountain; and also from Mr. D'Urban, who found it by the Kabonise river in British Caffraria, in both cases growing very near water.

Again, Dr. Harvey has detected it in Mr. Sanderson's collections from Natal, and in Mr. Hutton's from the Katberg, altitude 3000 feet, who speaks of it as a "beautiful pink Heperantha," showing its affinity in his eyes to that genus, to which Mr. Backhouse also detected a resemblance.

It is a plant of great usefulness, affording brilliant spikes of flowers during the autumn months. These are effective for the decoration of vases in rooms, the flowers expanding in water after the manner of Gladioluses. The plants are also very valuable for conservatory decoration during the late autumn and early winter months. When employed for this purpose clumps only need to be dug from the open ground early in October and potted in light rich soil, and if placed in a genial temperature flowers will be produced until Christmas. The plant is hardy and will grow freely in ordinary garden soil. It is highly worthy of extensive cultivation.

ADIANTUM CAPILLUS-VENERIS—LANDSLIPS.

I REMEMBER one year judging at Hereford with Mr. Charles Turner and Hercules. We had some bouquets to judge which were composed of Roses and wild foliage. One lovely bouquet was made up of Maiden-hair Fern, and I objected to it as not being wild foliage. Mr. Charles Turner, however, said that he did not think we could disqualify it, as the Maiden-hair Fern did grow wild in some part of Devonshire, although, he added, there could be no question it did not grow near Hereford. So we gave (unwillingly) the bouquet the first prize. Since then I have tried to find this Fern, and have asked large Fern-collectors if they have ever found it wild. There is rather a celebrated collector at Lynton in North Devon, and he told me he had walked all along the north coast of Devon and Cornwall looking for it in the places where it was reported to grow luxuriantly, and he could only find one small plant near Boscawen. Judge, then, of my surprise and delight when a lady of my acquaintance found this Fern (*Adiantum Capillus-Veneris*) growing in the lane that leads from the Charmouth road to my church, in the very hedge that divides Devon from Dorset.

I write this for the purpose of asking any of your readers if they know of any other places where this Fern grows. I am told that it is to be found in the neighbourhood of Bridgewater.

One of the Editors of our Journal will be interested in hearing that there have been several fresh landslips at and near Lyme Regis. An immense amount of earth fell on the Esplanade at Lyme, completely blocking the road; whilst at Whitlands, the farm next to Dowlands (where the great landslip is), about seventy acres have subsided, and some cottages have been rendered so unsafe that the occupants have had to leave. The road, too, from Charmouth to Lyme is quietly settling into the sea.—WYLD SAVAGE.

ANEMONE FULGENS.

FOR the information of "G. S.," in notice to correspondents, page 538 of our Journal, respecting *Anemone fulgens*—I do not disturb my plants. They are grown in a full exposure to the sun, planted by the edging of the beds in our flower garden; in that position they are quite at home, and during the spring time reward us with a profusion of brilliant flowers. Glowing as the description may have been that "G. S." has read, it cannot convey an adequate idea of the effect that is produced by lines of this, one of the most striking of our spring flowers. It ought to be in every sunny flower border in the three kingdoms, for we have no flower in cultivation that can surpass our Windflower in early spring and summer time. The soil in which the plants are growing is good loam mixed with leaf soil and coarse grit.—H.

EARLY WRITERS ON ENGLISH GARDENING.

No. 26.

JAMES LEE.

JAMES LEE was one of the best gardeners of his time. He was born in Scotland of respectable parents, but not in a station that allowed them to give him any farther education than is in the power of everyone to attain in that part of Britain; and which, at that period, was generally superior to what those of that rank in England can arrive at. He discovered very early a strong taste for botany, and we are warranted in asserting that when a youth of fifteen or sixteen he was well acquainted with

English plants, the knowledge of which he had acquired principally by the assistance of Culpepper's "Herbal." Being endowed by nature with strong parts, a retentive memory, and great perseverance, he made himself master of the Latin tongue, and became well acquainted with the Linnæan system in an early stage of life. This knowledge, indeed, of the sciences was in the end not superficial or the mere routine of gardeners in general at that time; but having accurately studied the principles of the science as exhibited in the "Philosophia Botanica" of Linnæus, he undertook to transmute the language and principles of that science into English for the benefit of his countrymen. In this attempt he succeeded so well that his "Introduction to Botany," which was first published in 1760, has since extended to the eighth edition, and has greatly contributed to the progress of the Linnæan principles of botany among all who were unable to have recourse to the original. This work indeed gave Mr. Lee a priority in his time that rendered his garden, or as it was called, his Vineyard, the resort of all persons curious in botanical researches, and

added not a little both to his fame and emolument. As he had himself a true relish for his great object, the cultivation of curious exotics, so he was remarkably successful in the pursuit of it; and received with pleasure the visits of all who, like himself, felt the satisfaction arising from those pursuits, especially those who joined to their taste a scientific knowledge of their object. In what estimation he was held by the most eminent botanists of the age is manifest by the compliment paid him by Van Royen, the professor of botany at Leyden, who, in the year 1767, called a new genus—Leea—of the Monocotyledonous class after his name. Mr. Lee's taste was not confined to botany; he was greatly conversant with shells, insects, and fossils, in which branches he made very considerable collections. In the two former of these he was particularly assisted by his much-lamented daughter Miss Annie Lee, whom he had inspired with a love of his own pursuits, and who added to her intimate knowledge of them an exquisite taste in drawing both plants, shells, and insects.

To these attainments, which gained him the respect and esteem of scientific men, we must add that as a member of society he was distinguished for a mind replete with benevolence, in his friendships he was steady and warm, in his dealings he manifested the greatest punctuality and integrity, and he lived to reap the reward naturally consequent on such qualities in the accumulation of a comfortable independence. In his domestic connections he was a kind husband and tender parent, and had the satisfaction of experiencing the reward of such virtues in the dutiful dispositions and good inclinations of his family. He had the affliction late in life of surviving his daughter above mentioned, on whom he doted. He left a son, successor to the Vineyard.

He was for some time under Philip Miller at the Chelsea Garden, and afterwards gardener to the Duke of Argyll at Whitton, Middlesex, who was a great importer of exotic trees, and for that reason only invidiously nicknamed by Walpole "a tree-monger." In conjunction with Kennedy, then gardener to Lord Bolton at Chiswick, Lee commenced the business of a nurseryman at the Vineyard, Hammermith. He was patronised by a great many of the nobility and gentry, to whom he became known by his extensive knowledge of natural history; and his garden became particularly rich in plants from the extensive correspondence he kept up with Linnæus and other contemporary botanists. He died August 25th, 1795. He was author of—1, An Introduction to Botany, con-

taining an explanation of the theory of the science, and an interpretation of its technical terms, extracted from the works of Linnæus, &c., twelve plates, 1760, 8vo. A work which Pulteney speaks favourably of, as having tended to a general diffusion of a knowledge of the Linnæan system. 2, Catalogue of plants and seeds sold by Kennedy & Lee.

The business at Hammermith has been conducted by three generations of the family of Lee, and the latest partner in the firm represents the fourth generation. By the recent retirement of Mr. John Lee, after fifty-six years of hard and honourable work, his nephew has become a partner, and the firm is now known as Charles Lee & Son.

The business of the firm is extensive, and occupies four distinct grounds—at Hammermith, Isleworth, Feltham, and Ealing. The grounds at HAMMERSMITH have been considerably encroached upon by buildings and an important line of railway. Only a few trees are now grown at the "head quarters;" but there is a considerable amount of glass, with offices and packing sheds, for the management of the decorative plant and seed departments. Vines are also grown here, or the Royal Vineyard Nursery would otherwise be an anomaly. For these large light houses of modern construction have been erected, and prominent attention is given to the cultivation of Vines in pots. Other houses are devoted to the cultivation of plants. There are structures for Camellias, Azaleas, Palms, Orchids, and general decorative plants. The plants are better than the houses, but the latter will be eventually replaced by new structures erected on the most approved principles, and the "old place is to be made new again."

ISLEWORTH.—This is the propagating department for Conifers, evergreens, and decorative shrubs. The nursery is easily reached by train from Hammermith (Addison Road station, Kensington), and is well worthy of a visit. It is compact, clean, orderly, and well managed by Mr. Marsden. There are long ranges of propagating houses, in which Conifers are being struck by thousands, a series of nursery beds containing the young stock, and an open space of

ground where they are subsequently grown to a saleable size. Wood Lane, Isleworth, is in fact the nursery of the other nurseries—the manufactory, and the plants and shrubs are great in numbers, small in size, and choice in quality. The variegated-foliaged Japanese shrubs are extensively grown, the Eucyonemes alone numbering many thousands, to meet the great demand for these popular shrubs. They are all small, not having time to grow large before they are purchased. Eleganses and Ligustrums are also in great demand for town decoration, and are largely increased. Large stocks are also being provided of such choice Conifers as *Cryptomeria spiralis* falcata, *Abies excelsa* aurea (the Golden Spruce), *Juniperus* atica, glaucous, very distinct; *virginiana elegans* (Lee), neoboriensis, bright green and elegant, and several others. *Thuja Veranensis* is in great demand for winter bedding, as also apparently is *T. semper-aurea*. *Taxus gracilis pendula*, a distinct Yew, is noticeable, as also are *Cupressus Lawsoniana lutea* and *C. L. delicatissima*. There is also a choice collection of Ivies, and these, with some of the Japanese shrubs trained on low walls, produce an excellent effect. In this nursery Van Geert's Golden Poplar is a valuable acquisition.

A short distance from this nursery is the arboretum under the management of Mr. Webb. There several acres of ground are entirely occupied with ornamental deciduous trees. As affording an idea of the completeness of this department, it may be noted that the collection of Oaks alone includes nearly two hundred species and varieties. There are also a great



FIG. 3.—JAMES LEE.

variety of weeping trees, one even in its leafless state being very conspicuous—the golden-twigged Ash, the drooping shoots being of a bright yellow colour. There are many fine standards of Caraganas, Catalpas, and Genista prostrata, the latter being very novel, and when in flower brilliant. Gooseberries are also propagated in this nursery. This large and choice collection of deciduous trees requires to be seen in summer, and cannot fail then to repay anyone visiting it.

FELTHAM.—This nursery is a short distance from Honeflow. It is nine or ten acres in extent, and is occupied with Conifers and evergreens, from small plants to handsomely furnished specimens. Especially fine are the variegated Hollies. Yews are of almost all sizes, and in many shapes, some as flat as tables, others vase-shaped, some trained as pyramids, others as standards. Rhododendrons thrive here admirably, as also do Azaleas and other American plants. Wellingtonias, Deodars, and Pinuses are largely grown. Picea amabilis (tree) being exceedingly fine. Here the Golden Spruce shows its character, the upper surface of every spray being gilded as if with a brilliant ray of sunshine, the under surfaces being green. Here, too, is flowering the old and valuable hardy Heath, Erica codonodes. This is a real winter-flowering plant. It is of close upright growth, showing its thousands of white roset-tinted flowers to great advantage. It is likely to be in great request for winter bedding when its merits become known. It is being propagated by thousands. Not far distant from this nursery another plot of fifteen acres has been secured, and is being stocked with trees and shrubs. The Feltham Nursery is managed by Mr. Dixon, and it is only just to say that it does him much credit.

ELALING.—This is four or five miles distant from Houslow, and is convenient of access from the Great Western Railway. The soil is a rich tenacious loam, admirably suited for the growth of fruit trees and Roses, to which twenty-five acres of ground are devoted. The Roses have nearly all gone, but the few hundreds left tell of their robust character. The fruit trees, too, are as good as trees can be—clean, healthy, and well furnished. There are trees to suit all tastes—pyramids, standards, espaliers, cordons, and on stocks which experience has proved the most suitable for the several varieties. The Apples number about four hundred varieties, and one more useful sort has just been negotiated for—the true Russian Transparent. Pears are similarly numerous, and the collection of all other hardy fruits, trained and untrained, are very complete. There is a large house for the cultivation of Peaches and Nectarines in pots, and the stock of these trees is excellent. This nursery is in charge of Mr. Cannon. Such is an outline of this old and extensive business, which throughout a period of upwards of a century was never in higher repute than now.

CULTURE OF THE CYCLAMEN.

Of all winter and spring-flowering plants none have risen to so much repute during late years as the Cyclamen persicum, for its blooming period may be prolonged from the latter end of October until the latter end of April. Most growers sow the seed when it is ripe, and others not until the latter end of January. But it is always preferable to sow the seed in August, as then the plants have a longer growing period and will make larger plants. If sown in August the plants must be kept growing in an intermediate house close to the glass during the winter, and be grown cool in the summer. Seedlings always bloom the earliest in the season, and old plants later on.

The seed may be now sown in pans in equal parts of loam and leaf soil and placed on a hotbed, where the seeds will soon germinate. After the second leaves of the young plants are discernible prick the seedlings out into pans in the same kind of compost as the seed was sown in, and place them back on the hotbed close to the glass; it is not advisable to place the bulbs under the soil at this shift. After the plants have made a few leaves repot them into small 60's in a mixture of two parts yellow loam, one part cow dung, and one part leaf soil, with a sprinkling of river sand, and if convenient place them in a pit where there is a cool bottom and a temperature of about 65°. They must be repotted into 48's about the middle of June, keeping the bulbs well up to prevent the water from settling in the crowns. Sprinkle overhead on fine days and shade from bright sunshine. By the middle of August discontinue sprinkling overhead and give an abundance of air night and day; a little manure water at this stage will be beneficial. It will be better for the plants if they are now

placed on a stage so as to have a free circulation of air among them, for they dislike damp. If they have been attended to as herein directed they will commence blooming by the latter end of October.

After they have done blooming give enough water to keep the leaves from flagging, and place them in a dry and well-aired situation under glass. The best time to repot them is when they begin making fresh growth. It is best to grow the old plants under cool treatment, keeping them well ventilated. —A. Y.

FORETHOUGHT REQUIRED IN GARDENING MATTERS.

PERHAPS there is no occupation that calls for more forethought than that of the gardener in a responsible position, for not only has he to tax his brain with what is likely to be the wants of the family he serves during the current or coming year, but he has to cast his mind still further ahead, and propagate or prepare fruit trees and shrubs which may be wanted years hence. Besides fruit trees and shrubs other crops, such as Asparagus, Sea-kale, Strawberries, &c., require his attention; for although these last several years, yet nevertheless they have a period of usefulness allotted them, after which they are no longer profitable, but must be succeeded by others, which it becomes the prudent manager to provide in time equally as much as the requisite number of bedding plants are by those whose study is to make the best display possible in their flower beds. Now to do all this effectually is no slight tax on the thinking powers of the person in charge, because, apart from what is the ordinary routine—the regular work—there may be much extra work in some department or other. The pleasure ground may be enlarged, or new walks or drives formed which it may be advisable to embellish with shrubs, and if a quantity can be brought forward in readiness for such alterations the advantage will be great. It is better to have plenty of small shrubs rather than a few very large specimens. Nothing tends to enliven a walk or drive through a copse or wood of deciduous trees so much as a plentiful sprinkling of evergreen shrubs, and it often happens that there is room for improvement to be made this way in the most complete places so called. At the time when old walks or drives were formed choice flowering shrubs or evergreens were possibly not so plentiful as now, so that we must not scuse those who made these drives, &c., of lacking liberality or knowledge of such matters, but simply the means were not at hand; whereas now-a-days nurseries are scattered all over the country, and choice shrubs, &c., exist in countless profusion, and are to be met with at a reasonable rate—very reasonable indeed in many cases, and the experience of the last few years has pointed out how important a part these are capable of playing in decorating private drives and public places. Even some of the wastes that have been taken in near large towns, which though formerly producing only weeds and Gorse, now glitter with Rhododendrons and other shrubs, to the delight of all who look at them. Hollies also are equally beautiful in their way, and where they exist as an undergrowth in some well-managed woods nothing possible can look better; but they are nevertheless not the easiest shrubs by any means to transplant and do well, and it will often be found that the place where they exist in the greatest perfection is where they have been planted by Dame Nature. But where the soil is suitable other shrubs also seem capable of being naturalised. The broad-leaved Berry, or Mahonia as it is more properly called, will sow and propagate itself where the soil and situation favours its doing so; and I believe the same is the case with B. Darwinii, which is still more beautiful. But the shrub of all shrubs for decorating some dry-looking sterile waste is the Rhododendron. This beautiful evergreen is now making its way over moors and common, and into plantations of all kinds, being often planted extensively for game cover, and is not injured so much as most other shrubs by that pest of all kinds of vegetation the rabbit; but to say that it is never attacked by these vermin is saying too much, for I have known thousands of Rhododendrons destroyed by rabbits, perhaps not eaten or partook of as food, but bit off as they grew. I may further add that rabbits have a particular relish for the choicest varieties. I do not know how to attribute this, but I suppose it is from that inherent instinct they have for mischief-making they choose the best.

Examples of the accommodating capacity of the Rhododendron to various situations are numerous. I need only call

attention to the display which these have made in places where the spirited liberality of those who planted them extensively in time long since gone by. Foremost amongst such places is Cobham Hall in Kent, where a former Lord Darney planted them on a hill intersected by walks or drives with overhanging Birch trees. Now these Rhododendrons have self-sown themselves all over the ground, that they form the principal crop, and flower in the greatest profusion at the proper time. Equally abundant, or perhaps more so, are they to be met with at Heron Court in Hampshire, the seat of Lord Malmesbury, where they are found growing by hundreds in the woods, and in some cases hanging over into the public roads, offering their tempting trusses of bloom to every passer-by. There is a little difference, I believe, in the appearance of the soil at the latter place to that of Cobham, but both contain all that is essential to the well-being of this plant, and to those who have seen it growing in profusion at places like those referred to, cannot fail to be highly pleased with it. To the sportsman it is also, perhaps, one of the most agreeable of all covers for game, and is more pleasant to pass through than Bramble or Gorse, or the mixed Beech coppices of ordinary undergrowth. It is on this account alone that the Rhododendron has been extensively planted of late years; and to all who have a wood occupying a dry elevated site, and a soil that seems at all adapted for it, I would advise a trial of these evergreens to be made—say a few groups of a few plants together first and wait a year or two, and if they succeed then more extensive planting can be carried out. Furthermore, I would advise those who do not wish at once to embark in a costly plantation, to look round and see if a suitable site for a piece of nursery ground can be had not too far from where the ultimate plantation is to be, and if it is in a wood to trench and prepare it, and after obtaining a few thousands of young seedling plants from some nurserymen who supply such at a very low rate, to plant them out in this nursery for two or three years, when they will take-up with balls as large as you like, and can be easily removed to their final quarters and planted, and being to a certain extent acclimatised to the soil, and they will do better than those imported from a distance of the same size. To do all this requires an exercise of that forethought to which this chapter is mainly directed. I ought not to leave the subject of the Rhododendron nursery without remarking, that if it be situated in some wood or other place where rabbits abound in great numbers, it ought to have a rabbit-proof fence around it, otherwise it will be found that these vermin will destroy a great number of the plants.

It will easily be seen that many other shrubs may be propagated or reared as well as the Rhododendron where planting is contemplated. The berries of the Aucuba may be sown and young plants raised, a due proportion of which will probably be males, and when planted along with the other kind a bountiful crop of berries will be produced without any artificial help whatever; and it is possible hereafter, when the plants become more numerous and are planted extensively in places where they thrive, that they may eventually sow and propagate themselves in the same manner as the Holly and Rhododendron does. A suitable site and soil will no doubt enable many other shrubs to fit themselves to the neighbourhood. For instance, Privet multiplies itself in a general way to any extent, and in some places Spurge Laurel (*Daphne laureola*) does so too, while more often the Butcher's Broom is found growing wild in great abundance. Less plentifully is also the Juniper and Box, and in a few localities the stately and dignified Yew is similarly met with; but as all these are British plants they may very properly be expected to flourish. There seems no reason why many other hardy shrubs should not assimilate themselves to the position in this country resembling those from whence they came, that future generations may possibly look on many of them in the same light we look on the Rhododendron, as useful accessions to our woodland scenery, and reflecting great credit on those who first placed them where they all that time appear to so much advantage.

Having diverged on the culture of the Rhododendron, I must leave the further consideration of the subject of looking forward to the wants of a future time until another occasion, unless someone else supplement what has been already said by pointing out new directions in which forethought ought to be directed, as the matter is one on which a good deal may be said, and it is also one to which we cannot too forcibly call the attention of all concerned. By a judicious timing of things in general present work need not be neglected, the great secret being to do everything at the most expedient time,

the study of which alone forms one of the features of that prudent forethought which it is so desirable to direct and encourage.—J. ROUSON.

CULTIVATION OF THE RASPBERRY.

The Raspberry is not so much valued for dessert as some other fruits, but for preserving, and especially for making vinegar, it is greatly esteemed. Amateurs with small gardens generally grow a few rows of canes, and in large gardens extensive quarters or plots of ground are devoted to Raspberry culture. In many parts of England and Scotland it grows wild in the woods in large quantities. The fruit on these, however, is not so fine as when the plants are properly cultivated, and any attention they receive in this way is always amply compensated for by the extra size and abundance of the fruit.

Young plants are sometimes raised from seed, which is sown in well-prepared soil about this time; but this mode of increase has so little to recommend it that I will make no further remark concerning it, but pass on to say that the best way of propagating the Raspberry, and that generally adopted, is by suckers or offsets. These may be taken at any time during the period the leaves are off the canes. In severing them a spade should be used to cut the roots clean away from the old plants, and in doing this care must be taken not to injure the roots of the latter. Old plantations generally throw out suckers some feet from the base of the canes or roots which were originally planted, so that from such plenty of suckers can always be had without much danger of doing damage in any form. Perhaps I shall be better understood in the following way: Supposing a few rows, or any extent, of canes to have been planted six or more years ago, the roots by this time will be very large, with many ends of old canes projecting above the soil. The young canes, especially if the plants have been the least neglected, will not be so strong as they were for a few years after they were planted. This indicates a decline in the plant, and when this takes place it is always much better to make a fresh plantation than spend time in trying to uphold the vigour of the old plants. But the old plants should not be discarded until others have been provided to take their place, and to do this the suckers must be taken off at least one year before the old plants are thrown away.

Plants in a degenerated state at present should have every sucker taken from them at once; but previous to doing this dig and abundantly manure a piece of ground, and the suckers must be planted in this in rows about 18 inches apart. Here during the summer they will make strong canes, and what is of more importance at this time, a mass of strong roots. Early in autumn the strongest piece of ground in the garden should be cleared of its occupants, a quantity of manure spread on it, and then be trenched and mixed to the depth of 2½ feet. Planting may then be proceeded with, the young canes being taken from where they have been growing throughout the summer, and planted 5 feet between the rows and 1 foot between the plants. If planted in this form they have to be trained to a trellis. This is made by placing strong upright supports 8 or 10 feet apart, and nailing two or three narrow strips of wood to them, to which the canes must be tied. This support should be 4 feet high. In the place of the narrow strips wires may be fixed, and when this is done there must be a strong support at each end of the row to keep the wires tight. Another plan is to plant a root every 2 or 3 feet, and train the canes from it to a straight stake, but this plan and one or two others which I have tried I have not found so profitable as the first described. However, whichever way of training is adopted, the supports should always be fixed before the young roots are planted, then plant the roots to them. After planting tie the canes to the supports, and nothing more will require to be done until the following autumn excepting frequently Dutch-hoeing the surface about the roots and between the rows. Let all the young canes grow which appear. Little or no fruit will be had from them during the first summer they are in their permanent quarters. At the end of the first season after planting loosen-down the old canes and cut them away level with the ground, then select three or four of the strongest canes made during the season and tie them in the place of those cut out. The strong canes may be topped at 4 feet from the ground, the weaker at 2 feet. Do not tie them closer than 3 inches apart against the trellis. When tied to stakes it is difficult to avoid crowding, and this should be avoided when well-developed fruit is desired.

Pruning and training throughout their existence consists of

an annual repetition of this practice. After pruning a good quantity of decayed manure should be spread over the roots and turned in about 2 inches below the surface of the soil with a fork. Do not turn up any of the roots in doing this; some only spread the manure over the surface, and do not cover it with soil, but this is the least profitable way, although it is rightly supposed that part of the nutriment from the manure is washed down to the roots. Plenty of good feeding at the roots is excellent at all times for the Raspberry, and this must not be neglected or failure will be the result. When in a healthy free-growing state insects or disease of any kind is never troublesome.

The following varieties are worth growing:—Carter's Prolific, very large red; Red Antwerp; Fastolf, dark red, great bearer; Fillbasket, prolific and excellent; and Yellow Globe, pale yellow with fine flavour.—PRACTITIONER.

CATALOGUES.

ALTHOUGH an amateur my address appears to be known to most nurserymen, seedsmen, and florists, for a pile of catalogues are already to hand. I shall select from time to time something from most of them, and they will be also kept for reference—at least such of them as can be conveniently referred to—and this brings me to what I have to say.

An eminent horticulturist remarked to me the other day that a catalogue should possess two essentials—accuracy and convenience of arrangement—should be, in fact, like a dictionary, where the representatives of any known genus, at least those of current value, should be alphabetically arranged, enabling them to be turned to at once. I am quite sure that that is a right view to take of catalogues, and it becomes the more necessary to adhere to it since these compilations have become so voluminous. I willingly admit that many catalogues are admirably "turned out," and far surpass in excellence of execution the trade lists of any other country that I am acquainted with, but the English do not surpass the foreign catalogues in accuracy.

A catalogue of plants and seeds, but especially of the former, should be copious yet concise, and if the contents are not alphabetically arranged a full index becomes a necessity. Yet there are some catalogues which are bulky in their nature and arranged in sections, but are without even a sectional index. For myself I never refer to such lists. I cannot spend half an hour in searching for that which ought to be found in a few minutes. A catalogue should be a guide and not a puzzle.

I recently had occasion to consult some lists of popular plants, such as florists' flowers and bedding plants. I laid my hand on a "guide" which I considered would contain precisely what I wanted, so perhaps it did, for it was very comprehensive but so divided into sections, sub-sections, and minute "classifications" that the work of wading through it became positively irksome. I submitted this "guide" to an author (above alluded to) of standard horticultural works, who after a careful perusal of it returned it with the remark—"It is one of the best and one of the worst catalogues that I have seen." I quite feel that he was justified in that remark, for the lists of plants are extremely ample but most perplexingly arranged.

I am glad to see that the names of the raisers are being attached to meritorious flowers. That is an act of justice to the men, and renders a list additionally instructive and less liable to be thrown aside as ephemeral. The good old plan of placing the raisers' names in parenthesis in an alphabetical list of the names of flowers has not yet been improved upon, and catalogues thus arranged are the most generally acceptable.

The descriptions attached to many plants and flowers are frequently unnecessarily prolix. I do not mean the scientific descriptions, but the details of the merits and qualities of the plants described. There is too much repetition, too many sentences of praise, as if each was a prop for the other, strengthening it. It is not so. Many props are suggestive of weakness, and mixing is generally diluting. A clear, terse, firmly written sentence in one line is worth a dozen lines of laboured eulogium.

It is common to hear the opinion expressed that catalogues are growing unwieldy in size. I think there is force in that remark, and from this fact—I have two or three excellent examples of modern catalogues; so attractive are they that I could wish that many of my amateur friends could see them, friends who have gardens but who know nothing of the existence of these elaborate garden annuals. It is only my nearest neighbours to whom I can conveniently show these "volumes,"

but were they of a size to fit my breast pocket or even my "black bag" without being crushed and injured, I am confident they would be "handed about" much more extensively than they now are.

A word cannot be withheld on the pictorial aspect of catalogues. The illustrations are more chaste than before, and more truthful. There is less of the "Little-Red-Riding-hood" character about them than formerly, when they were suggestive that horticultural readers were as children, requiring "plenty of colour" to catch the eye and amuse. A first-rate plain engraving leaves a much better and more lasting impression than does a fifth-rate coloured picture, and not one in a hundred of these are of more than that calibre. In this respect the preparers of catalogues have shown excellent taste in giving a few good coloured impressions rather than a plethora of cheap "Red Ridinghoods." As I can hand my catalogues to but few friends I can only advise other amateurs to purchase, for the catalogues are "marvels of cheapness" at their advertised prices, and they are highly calculated to foster a taste for flowers and increase the interest in gardening which is so desirable and beneficial.—AMATEUR, F.R.H.S.

HYDRANGEA HORTENSIA OR HORTENSIS.

THE common garden Hydrangea is called *H. hortensis*, a very common error. Knowing it to be named *H. Hortensia* in honour of some French Madame Hortense, I wrote it "Queen Hortense," without stopping to consult the authorities, as I should have done had I supposed that the note would be printed. I was wrong as to the particular Hortense, but right as to the point I wished to make—that *Hortensia* is the proper specific name of the plant, and that *hortensis* is wrong.

The botanical name of the plant is *Hydrangea Hortensia*. The reason for giving this name is told by several authors, but the story is nowhere more concisely related than in London's "Arboretum et Fruticetum," vol. ii., page 996. After giving the names for the plant in Chinese and Japanese, London says:—"In Europe it was named by the celebrated Comtesse in honour of Madame Hortense Lapante, wife of his most particular friend, M. Lapante, a watchmaker. Comtesse first named it *Lapantia*, but in order that the compliment to Madame Lapante might be the more direct, he changed the name to that of *Hortensia*, from her Christian name, *Hortense*. The plant was afterwards discovered to be a species of *Hydrangea*, a genus previously established by Gronovius; but the name *Hortensia* was retained as its specific appellation, and it is still the common name by which the plant is known in French gardens."—(*American Gardeners' Monthly*.)

CLIVE HOUSE SEEDLING GRAPE.

THE notice of this seedling by Mr. Bowie in your last issue requires a few plain words.

First, as to the implied charge of claiming to have raised the seedling myself. I have to say that I did not exhibit it as my own raising. This condition was not required by the Committee, nor was it demanded in the interest of horticulture. It is sufficient that the variety be new, distinct, and of superior merit.

Second, as to the actual history of the seedling. That given by Mr. Bowie, that it was raised by Mr. Wm. Caseley twenty years ago, is absolutely and demonstrably wrong. The Vine from which my specimen is believed to have been taken was raised by Mr. Bailey, late gardener to the Duke of Northumberland, at Stanwick upwards of twenty years ago, and brought by him to Alnwick along with several other seedlings. Two of these are now preserved in the Castle Gardens, and have all along been known and shown as Bailey's seedlings. I received mine six years ago; it was given, and was labelled as Lady Downe's. On being fruited the difference was obvious to myself, to Mr. Ingram the present head gardener at the Castle Gardens, and others, and it was supposed to be, and has been freely spoken of, as one of Bailey's seedlings ever since. No story of Mr. Caseley having raised it has been given out till the past summer, when its superiority became manifest. The story of Mr. Caseley having raised it was then and there flatly contradicted in the presence of a noted Grape-grower. So far as I know and can discover, no seedling Vine other than those brought by Mr. Bailey has been raised or fruited at Alnwick Castle Gardens since Mr. Bailey came, upwards of twenty years ago.

Third, as to my right to the seedling. On discovering its

value I saw Mr. Bailey, whom I had not seen since he left Alwrick, and obtained his unqualified sanction to offer it and do with it as I liked.

Fourth, as to its identity with the seedlings now at Alwrick Castle Gardens. I do not vouch for such identity. There were several brought by Mr. Bailey. Whether the one from which mine was taken has been preserved, or whether mine was raised from one of those destroyed, I am not called on to affirm or deny. This, however, I know, that an attempt was made three or four years ago to obtain a certificate for one of these very seedlings which signally failed, whereas on the 6th of December last my Grape at once and unanimously obtained a first-class certificate.

Fifth, as to the name. It was necessary to give one before the certificate could be issued, and in the circumstances as above narrated, I had no scruple in giving its present name, "Clive House Seedling," as Mr. Bailey the only other party to be consulted, had given me full liberty to do as I liked.

The Vine thus named and registered must stand on its own merits. After all has been said it is a founding the parentage and connections of which none can vouch, but its high qualities have secured it the unanimous approval of the Fruit Committee of the Royal Horticultural Society.—D. P. BELL.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

We have still been debarred from doing any work on the kitchen-garden quarters owing to the wet. Peas that were sown on a border facing south about the end of November are making very fine growth. We shall always when sowing early dress the seed with the carbolic mixture recently alluded to, as it most effectually protects the Peas from mice. The same mixture is equally valuable for dressing seed Wheat, and prevents it from being eaten by the rooks: a pint and a half of the mixture is sufficient to dress thoroughly four bushels of Wheat. This ought to be good news for farmers who have to pay a boy to drive away the rooks, which nevertheless generally contrive to carry away a large quantity of the precious grain.

The Peas sown to stand the winter were William I., Alpha, and Dr. Hogg. Our experience is that the first-named is an excellent early variety for standing the winter; it is also very early, and altogether is perhaps the best garden Pea for the earliest crop. The pods when ready for gathering are very large and of a dark green colour. Alpha is not such a hardy variety, but it has stood bravely through the wet and the damp, muggy atmosphere. It is a wrinkled Marrow, not perhaps of the quality of Veitch's Perfection or No Plus Ultra, but it comes nearest to them, and is only a week later than William I. The pods are not so showy nor of such a dark glaucous green as William I., and for that reason are not so well adapted for exhibition, but it is quite certain that the Alpha will always be preferred when cooked. The true stock of Dr. Hogg is a grand early and prolific Pea, but it is a question whether the true stock has not in some way become mixed with a spurious variety. The seeds of the right variety are wrinkled and slightly angular. It is the best variety to succeed Alpha. We cleared some Broccoli from a dry border, forked over the ground, and made another sowing of the same varieties.

For later sowings we might trust to varieties raised by Mr. Linton, as such sorts as Hill-top produce enormously, but our last year's experience with Dr. McLean will lead us to sow large quantities of that sort. If we are not mistaken it will hold a high position in years to come. Veitch's Perfection also must hold a place in every collection. In our dry soil with ordinary treatment the Pea crop is apt to fail at the height of the season; but when the ground is trenched and manured as advised in previous numbers the Peas usually bear heavily and continuously, but the pods must be gathered as soon as they are ready. Allowing the pods to become over-ripe is fatal to a succession of them.

Celery has not suffered from frost this winter, and clean straw placed over the ridges as recommended in the autumn throws the wet from the top of the plant; it is, of course, carried down between the ridges, but there it can do no harm. We looked over the Potatoes intended for planting. They have been kept in a dark place and have sprouted to a considerable extent. These sprouts were rubbed off, and the sets were laid in shallow boxes in single layers; a little earth was placed around them—just enough to show one side of the Potato above the soil. The best place for the boxes is then to place them in a cool greenhouse, any tight place where the growths will be strong and healthy. Of course frost must not reach them.

We have left Jerusalem Artichokes in the ground, and dig them out as wanted. A quantity of Horseradish was trenched up and stored, and some more planted for use in future years.

VINERIES.

All who make any pretence to grow forced Grapes will by this time have started their early Vines. The Vines in our two earliest houses though pruned early cannot be said to be starting well. The growths are breaking very regularly over the canes, but they do not possess that vigour which so delights the Grape cultivator; still they are likely to start freely when the continued heavy cloudy atmosphere gives place to days of occasional sunshine. Since the Vines were started, one house in November and the other early in December, we have had probably but one day in which the sun had sufficient effect to raise the temperature to the maximum point. This, to some extent, will account for the slow progress the growths have made. There still seems to be considerable difference of opinion as to the desirability of applying bottom heat to early vinery borders. It has been stated, and it should be a warning to others, that placing fermenting material on the borders about two months before starting the Vines is likely to cause complete failure. It does not seem reasonable treatment to do this, but many gardeners fancy that it is wise to start the roots before the tops. Our own practice, which has always been successful, is to water the borders outside and inside with tepid water, and as the water is applied the fermenting material is laid on to keep the heat in. The same day that this is done the house is started with the temperatures which were recorded at the time. As soon as the buds have started an inch or so, the fermenting material, which has lost most of its heat, is turned over, and some fresh added to it. During the operation more water is applied. This is repeated four or five times during the season. The last watering takes place when the Grapes begin colouring. We do not always cover the inside borders, but a narrow ridge of fresh stable manure is placed in the house, and the heat is kept up by frequent additions from the stable. Until the Vines start into growth the canes are syringed with warmish water once or twice a day, afterwards syringing is discontinued.

Vines in pots should be kept in rapid growth. The night temperature ought not to exceed or fall much below 65°; in mild weather it may rise to 70°. Bottom heat for the pots ought not to fluctuate much from 85°; the pots should not be plunged to the rim, two-thirds of their depth is better. After the fruit is set dressings of rich manure act beneficially; they entice the roots to the surface, and they work into the dressing.

GREENHOUSE AND CONSERVATORY.

Those who grow specimen hard-wooded plants will now be able to find time to tie the flowering wood into position. This work requires that the operator should have a knowledge of the plant upon which he is engaged. Not a flower show is held during the summer months but numbers of plants may be seen tied in a manner that they would not have grown into naturally. Severe and formal training must also be deprecated as an outrage on good taste; all the flowers and growths are trained into a position that does not admit of the slightest irregularity of outline; if a flowering growth should escape a few inches out of its place it is trained back to preserve the regularity of surface. The experienced exhibitors—those who have gained a high position in plant culture—will not outrage good taste in this matter of training, and judges who are well up in their work will surely take into consideration the method of training as well as the health and other points of culture in the plants.

In reference to the arrangement of plants in the conservatory or greenhouse it is not the merits of this or that plant that are taken into consideration, but the effect of the arrangement as a whole; still to a cultivated mind well-grown healthy plants, each one trained into a pleasing position, will be the eye, yet the eye is not the first object and not the training of it is of paramount importance. Such plants will look well on any stage, and will also form a perfect and harmonious whole. They ought not to be placed closely together, nor will they require to be. Not unfrequently plants are placed thickly together either to hide unhealthy or badly trained specimens, and the mere fact of placing them thickly together for this purpose tends to make matters worse, as badly grown examples will become worse, and those which are unhealthy will die outright. Any plant in good health freely exposed to light and air will have a tendency to grow in its natural position, and should be trained accordingly.

At this time great care should be taken in watering, but nearly all plants require more water now than they did a month ago. Heaths, Azaleas, and most of the New Zealand plants are now making roots, and some of them are beginning to make growth, and at the same time to suffer for want of water would injure them for the season; the small hair-like roots are killed, the energies of the plants are crippled, diseases and insect pests are also encouraged by injudicious waterings.

Hyacinths, Tulips, forced shrubs, Roses, and other plants are now being brought in, and they must also be kept in health. The greenhouse or conservatory should be kept a little closer for a day or two after a batch of newly-forced subjects are introduced. As plants go out of flower they must be removed to some house where they will restore their wood for next season. It is ruinous even to hardy plants to place them out of door

after they have been forced; the young growths, if they are not killed, certainly suffer material injury by that violent exposure.

FLOWER GARDEN.

We are now about making preparations to propagate such bedding plants as are best propagated in the spring, or of which there is not sufficient stock. We prefer a heated pit to ordinary box lights. The temperature of the pit is kept at about 55°, and a bed is made up of any fermenting material that can be obtained, some cocoa-nut fibre refuse being placed over the surface of the bed, in which to plunge the pots. It is difficult in our district to obtain healthy cuttings in the autumn, and they do not improve much in health during the winter. The best treatment is to place the plants in heat about Christmas to promote growth, and as soon as cuttings can be obtained they may be taken off and propagated, and with a little care a fine healthy stock can be obtained; red spider, thrips, and green fly must not effect a lodgment upon them. Ageratums, Heliotropes, and indeed all free-growing plants make the most healthy stock if propagated in spring. All sorts of Pelargoniums ought to be propagated in autumn.

In the florist department there is always plenty of work after this time. Auriculas, if the weather is open, may be surface-dressed after some of the old surface soil has been removed. The plants must be freely ventilated when the weather is mild. In fine open weather the lights should be removed. It is a subject of some anxiety as to how Auriculas will flower next season, as they have not had the usual resting period. The soil has scarcely ever been frozen in the pots. Carnations and Picotees are in a similar plight; the growth is suggestive of March more than of January. We keep the pots clear of weeds, water with caution, and air freely.

Tulips are fairly out of the ground, and growing apace. They must be protected in some way from severe frost, and should the weather be for a few days, stirring the surface of the beds will be of much advantage to them. Pinks require similar treatment. If the surface of the ground is just stirred it dries rapidly.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W.—*Catalogue of Garden and Flower Seeds, Horticultural Implements, Knives, &c.*

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Catalogue of Flower, Vegetable, and Agricultural Seeds, Garden Implements, &c.*

Thomas Buryard & Sons, Maidstone.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Edmund Philip Dixon, 59 Queen Street, Hull.—*Descriptive Catalogues of Vegetable and Flower Seeds.*
Hooper & Co., Covent Garden, London.—*Illustrated Catalogue of Seeds and Garden Requisites.*

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (P. J. O. H.).—London's "Hortus Britannicus."

EPHYLLUMS AND PERESIA (A. B. G.).—They are closely allied to the Cactaceae. The genera were formerly combined. Any florist who advertises in our Journal could supply you.

ARNOTT'S STOVES.—"West Riding" wishes to know where these, suitable for a plant house, can be purchased.

AMATEUR'S WHEELBARROW (R. K.).—Write to the Rev. J. W. Huthwaite, Bawthorpe, Ebor.

STRAWBERRY AND HOP PLANTING (N. J. M.).—Strawberries may be planted whenever the soil is in a suitable condition. If planted from the present time onward to the spring, little if any good fruit would be had this year unless the plants were very strong and a year old. They will answer perfectly well in the ordinary soil of a good garden. Hops may be raised from seed sown in March, but the usual method is to plant "sets," consisting of that upper portion of the roots which all good cultivators cut off at this season of the year. The culture of this plant is so simple that it will suffice for all ornamental purposes to plant it in good soil, training the growth upon poles or such other supports as fancy may suggest, keeping the foliage quite clean, and removing the growth after it decays by cutting it off close to the ground.

MELONS DISEASED (Eyre Court).—The specks upon the fruit when approaching ripeness are a consequence of too much moisture both at the roots and in the atmosphere, the latter being not only moist but close. Keep dry when ripening, and avoid too rich soil; nothing answers so well for melons as strong loam, the top 3 or 4 inches of a garden, laid up with this soil in the first of the year, and the plants set in it. If the soil is too rich, the fruit is dead, though we have frequently used it fresh. Chop up rather fine and tread firmly in the bed, firm soil inducing short-jointed fruitful growth.

PROPAGATING BEGONIAS (E. W. B.).—All the Begonias may be propagated by cuttings, which is best done in early April—cuttings of 2 or 3 inches length inserted in sandy soil and placed in a hotbed, keeping close, moist, and shaded until root, the top 3 or 4 inches of cuttings may be taken off, the young shoots when they can be obtained and struck in gentle heat. They

will grow on and form bulbs. Plants are also readily raised from seed, which may be sown in March in a hotbed. The large-leaved variegated section may be raised from leaves, pegging them upon the surface of a pot and keeping moist; young plants will arise from the midribs of the leaves, which should be detached and potted-off singly.

MEADOWS GROWING (St. Edmund).—The "small place" would give you very little room for a bed, as you would not be able to walk alongside the bed without taking up too much of the space. Either the coach-houses or stable would answer well, and preferably the former, as it is the freest from draught. No drainage is necessary; the bed may be made upon the hard floor.

PRODUCTIVE CUCUMBER (Idem).—Growing upon ten in frames and wishing to have a fresh one every day, there are two better than one of the Six-Node House type. MERRI'S Duke of Edinburgh is the best we have grown. Telegraph is a very good variety, better for houses than frames. The former will, we feel certain, satisfy you as to quality and quantity.

PRUNING NEWLY-PLANTED FRUIT TREES (J.).—The trees doubtless made a large quantity of fibrous roots last year, and will be in a condition both to mature fruit and make plenty of growth. We would not prune severely this year; cut back the points only of the young wood.

FERNS AND OTHER PLANTS DISEASED (G. M.C.).—They have been attacked by thrips and red spider. You must fumigate with tobacco smoke to destroy the first, and syringe the leaves freely for the spider. As the leaves are much affected it will be necessary to fumigate three or four times at intervals of three days.

JOINING HOT-WATER PIPES (D. H. W.).—Your plan of using iron filings and old rope is the best. If too much iron filings are used in proportion to the rope the joints are apt to crack. We have seen good joints made with gutta percha rings made to fit tightly into the socket. Red lead has also been used with success.

ORANGE GRAPTING (A Constant Reader).—The operation should be performed within 6 inches of the ground. In such a way trees will be produced having clean stems from 1 to 2 feet in height. The plants should be kept in a close frame or pit until the union has fairly taken place; and if the stock is slightly stimulated at the same time, by being plunged in a moderate bottom heat, the union will be more speedily accomplished. Any of the ordinary methods of grafting may be employed, the great object to be kept in view being to have the scion and stock of nearly the same size. No clay is used, but a little fine moss is placed over the point of union, and many only secure the scion to the stock with two or three rounds of soft woolen yarn.

MELONS FOR EARLY CROP (G. D., Beaumais).—You wish for four varieties. Read's Scarlet-flesh, Cox's Golden Gem, Easton Cash, and Meredith's Hybrid Cashmere are good and free sitters.

TROPEOLIDS (A. F. B.).—We think your Tropaeolum is *T. tuberosum*, and not *T. speciosum*. If you will send us a spray with flowers in the summer we will gladly give you the information you require.

FERNS UNHEALTHY (Stoke-on-Trent).—We do not think the large frond you have sent has been eaten by a caterpillar, but we rather attribute its decay to a close damp atmosphere, and the dripping of condensed moisture from a roof of the house. The frond has farther been infested with thrips. Sponge the plant with strong soapy water, and provide a more genial temperature—a less stagnant atmosphere. *Adiantum farleyense* frequently loses some of its interior fronds, their decay being accelerated by a low temperature. Remove all the decaying parts, top-dress the plant with fresh compost, water carefully, and raise the temperature of the house if below 40° at night.

INSECTS ON VINES (A. B.).—They are the thrips, and may be destroyed by fumigating with tobacco two nights following, and each morning, after the night's fumigating, syringing with water at 120° with 8 ozs. of soft soap and a pint of tobacco water in each gallon. Repeat the application at the end of three weeks.

NAMES OF PLANTS (G. P.).—We cannot name from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

LES BASSES-COURS D'ANGLETERRE.

CHAPTER XII.—BIBURY, FAIRFORD.

It certainly was bitterly cold that drive from Cirencester to Bibury, along rough country roads and over hills with no protection, in one of the coldest winds we ever felt. We missed our south country hedges, for those built-up walls of loose stones looked so cold and cheerless, but when we came to Bibury it seemed so far from the middle of a wilderness. Directly we passed the home of Mr. Dutton's "collaborateur" with the mouthy roses still blooming fresh and bright upon its walls the scene changed, and it seemed as if a "merceau" of a continental village had been bodily dug-up and planted in the middle of those dreary expanses of arable lands. The hill for a background was there with picturesque cottages nesting in nest gardens at its feet; the village mill, the flowing river with its colony of domesticated waterfowl, the village church, the village emporium, the bright village inn; all were there.

Well, we passed them all, and we came to the vicarage. This was in November. It is now January! We have in pet unscratched borders snowdrops, anemones, and aconites blooming to-day. We hope Mr. Dutton has, but we tremble for the chance in those borders opposite the porch, for in them we have Black Red Gem hens as Black Red Gem pullets dusting, bathing, scratching regardless of bulbs, and perfectly indifferent to the cats stretched over them. We clasped our hands while the servant was answering the bell, and in a moment the fowls were up and scudded away amidst the thick shrubs, leaving behind only the faint recollection of some twenty or thirty birds well coloured, well shapen, and in hard feather.

Like many other Game-breeders Mr. Dutton keeps his cocks and cockerels at distant farm runs. We believe no less than sixteen homesteads in the neighbourhood afford country run and protection to small colonies of Black Reds, many of which, of course, are far away across those windy hills and engine-ploughed fields, and these we could not visit, but we made a good tour of the home premises and of many of the neighbouring farm runs. We do not profess to be Game judges, but in the company, as we were, of the owner of the birds and of the Stowmarket hero, who also was there and went round with us, we tried to improve our poultry education. We have repeatedly noticed that Game breeders have no fancy or regard for other varieties, while Cochins, Dorkings, or other breeders have greater knowledge of various breeds. We mean this as no personal insult to our many Game friends, but say it *en passant* rather as an excuse for ourselves. Well, to return: in the vicarage yard we saw large roomy wooden pens placed on tressles, and here were Black Red and Ducking cocks and cockerels penned for inspection and to get themselves accustomed to such confinement for the Palace and Birmingham tournaments. Good birds they were—some of the pick of the yards, looking invincible in their hard plumage and brilliant condition. We saw a very good cock, son of the Wolverhampton (1875) first bird, which lost his eye before he was shown, and he has since lost the other, and has consequently, we hear, been killed, but not, however, before he had bred some very stylish daughters, one or two more particularly so, by Mr. Matthew's old cup hen. Then we saw in a run near the church a singularly clear Silver Ducking cock; but this variety we hear Mr. Dutton intends to abandon, and so give more space for the Black Reds. Then next we saw at a barn the cockerel which most Game fanciers know, and which so many thought should have been first at Oxford. He was running with the hen which took the cup at the Alexandra Palace, and with her sister, who was much of the same stamp; and there were there, too, another promising cockerels, some not then in full feather. Then we saw a tribe of cockerels on a grass run above the kitchen garden, which have one of those charming old dovescotes to live in—one of those old manorial and substantial buildings belonging to bygone days. The lower nests had been removed and a ceiling put below the glazed lantern for the sake of warmth, and there on swinging roosts these cockerels slept.

Near here were some Indian Game—the genuine article, not the half-bred birds we see so many of the West of England shows. From a trio of birds which came to Mr. Dutton from Ramport only one bird (a hen) survived the journey, and she was put with a pure Montrose cock; but it was late in the season and only a few chicks hatched, which were late, but their owner hopes gradually to spread the genuine breed. We would advise him to try and obtain for them a class at Oxford, and make arrangements with the Secretary to procure some gentleman to judge who does know an Indian Game fowl when he sees one. After we had inspected these we set out for a "good constitutional," and paid many birds afternoon calls in their farmyard runs. Some would not respond, for they had already gone early to bed on that chilly November afternoon; but we were able to see them, and so in the November journey we drove back again to Cirencester to have the pleasure of renewing our acquaintance with many of those newly made feathered friends a few days afterwards in the Sydenham Palace, and glad we were not a little to find on that occasion that in that brilliant collection of old England's oldest breed of fowls one of the silver trophies had most deservedly been bestowed on a specimen from Bibury, Fairford.—W.

ABERDEEN SHOW OF POULTRY, &c.

THIS, the eleventh Exhibition of the Northern Poultry and Pigeon Club, was held in the Music Hall on the 11th, 12th, and 13th inst., when the following prizes were awarded:—

- POULTRY—Game—Black Red—Cock—1, W. Deen. 2, A. Brown. 3, — Cock—Hen—1, Booth & Toth. 2, J. Mackintosh. 3, J. Ballie. Brown Red—Cock—Cup, G. Peter. Cock—Hen—1, W. Deen. 2, A. Brown. 3, J. Ballie. Hen—1, A. Stephen. 2, J. Barrie. 3, T. W. Mitchell. Any other variety—Cock, 1, J. Ballie. 2, T. W. Mitchell. 3, A. Stephen. Hen—1, A. Mitchell. 2, T. W. Mitchell. 3, T. W. Mitchell. 4, T. W. Mitchell. 5, T. W. Mitchell. 6, T. W. Mitchell. 7, T. W. Mitchell. 8, T. W. Mitchell. 9, T. W. Mitchell. 10, T. W. Mitchell. 11, T. W. Mitchell. 12, T. W. Mitchell. 13, T. W. Mitchell. 14, T. W. Mitchell. 15, T. W. Mitchell. 16, T. W. Mitchell. 17, T. W. Mitchell. 18, T. W. Mitchell. 19, T. W. Mitchell. 20, T. W. Mitchell. 21, T. W. Mitchell. 22, T. W. Mitchell. 23, T. W. Mitchell. 24, T. W. Mitchell. 25, T. W. Mitchell. 26, T. W. Mitchell. 27, T. W. Mitchell. 28, T. W. Mitchell. 29, T. W. Mitchell. 30, T. W. Mitchell. 31, T. W. Mitchell. 32, T. W. Mitchell. 33, T. W. Mitchell. 34, T. W. Mitchell. 35, T. 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- 3, W. Matthew. Cockerel—1, W. Snowie. 2, A. Allan. 3, Mrs. Grant. Pullet—1, 2, and 3, Mrs. Grant. Silver-Grey or White—Cock—1, Mrs. G. Armistead. 2, J. Masson.

Hendon hen was prettily marked and large. The cup went to Crèves, and a good pen they were, extremely deep in colour and massive in frame; a good pen of La Flèche taking second honours, and Crèves again third. *Leghorns* had a class in which both c'sours completed, and Whites were first and third. In *Minoræ* good Blacks were first and Whites second, but they carried too much of comb for our taste, as did all the prize pens; third, again, was taken by Blacks. The Variety class was excellent; we noticed some splendid Sultans and good Silkies. The *Bantams* alone made a show of themselves, and the cup Black Reds were good in colour and very stylish; and in Brown Reds the best pen secured the cup. The cock very pretty in head. In Laced the first was won by a pair of Silvers, even in markings and fairly small. In the variety Bantam class Blacks were first, and good Booted second. Thirteen pens in this class were noticed by the Judge.

The *Waterfowl* were good. The first Aylesburs were big and clear in bills, while in Rouens the cup pen was of fine colour and very large. In East Indians the cup remained in the county. We were glad to see a new name in the prize list, though that of an old fancier of the breed; winning seems all the season to have been monopolised by two or three yards. The second were very letrous and neat in shape; third (Mr. Sainsbury's) were in beautiful bloom, and we are glad to see that he has changed his mind in not retiring. The Variety class of the beautiful, quite a sight of itself, and fifteen pens of the seventeen entered had cards. The cup pen was Carolinas in exquisite bloom.

Among the *Pigeons* the Pouters were of high merit, Mrs. Ladd's grand White scoring another cup in hons; the second was Mr. Holme's celebrated Blue. *Tarbits* were excellent; Mr. Burnell and Mr. Cresswell having a close contest for premier honours in the Any other colour class. *Fantails* were splendid, Mr. Serjeantson's Whites being marvellous in tails and carriage. Nuns had seven pens, and the Judge awarded the prizes, all three of them, so we may believe that for once they had not been so over-dressed as not to pass muster. We were pleased to see so many Archangels and so much quality among them. The winners seem to have been well selected, and an extra second was given. The *Dragons* were very strongly represented, and Mrs. Bishop and Osmond sending large teams, and not having Mr. Wood to oppose them, had to have among the prizes, though Mr. T. C. Burnell came in here and there with some good birds. Mr. Bishop won the Dragon point cup with, we believe, six points. In the Variety class Austrian Pouters won first and Frillbacks second. In the collections Mr. Baker came in a good first and took the cup, as too he did the third prize as well.

We hear the prize money has already been paid, and that the birds were very speedily dispatched at the close of the Show.

POULTRY.—*DORKINGS.*—Coloured.—1 and Cap. F. Parlett, 2 Miss Pasley, S. F. Caws, Rev. H. W. F. Hamilton, White.—1 and Cap. O. E. Cresswell, 2 A. Holmer, 3 Mrs. Hayne, Bishop, 4 W. Edwards, Newham & Manly, 5 E. Pritchard, 3 Rev. G. W. Joyce, vhs. W. V. Edwards, Newham & Manly, Light.—1 and Cap. J. Bloodworth, 2 P. Haines, 3 M. J. T. Holmes, vhs. R. Percival, Colours.—1 and Cap. J. Bloodworth, 2 P. Haines, 3 M. J. T. Holmes, vhs. H. Tomkinson, 3 R. E. Percival, vhs. H. C. Nicholls Partridge.—1, R. E. Percival, 2 H. P. Tomkinson, 3 G. Lias, vhs. T. W. Anna, Any other variety.—1 and Cap. P. F. Fernald, 2 T. W. Anna, 3 W. White, vhs. E. Y. Atinch, Brown Fowler, SPANISH.—1 and Cap. J. Boulton, 2 P. Le Sneur, 3 J. Woods, vhs. J. Yates, Game.—Black Reds.—1 and Cap. J. Voinis, 2 W. H. Stagg, 3 F. Wards, Brown Reds.—1 and Cap. J. Voinis, 2 T. Danton, 3 J. T. Brevant, Any other variety.—1 and Cap. F. Wards, 2 J. Voinis, 3 A. De La Mare, HAMBURGS.—Gold or Silver.—1 and Cap. O. E. Cresswell, 2 H. Beldon, 3 J. Smith, Golden-spangled.—1 and Cap. J. Rawley, 2 Denn, 3 T. May, Silver-spangled.—1 W. Anderton, 2 S. E. Harris, 3 H. Beldon, Black.—1, Rev. W. Serjeantson, 2 N. Marlor, 3 C. F. Copeman, POLINDS.—1 and Cap. H. Beldon, 2 T. Norwood, 3 G. C. Adkins, vhs. G. C. Adkins, E. Atwell, A. Dary, J. T. W. Anna, 3 W. White, vhs. E. Y. Atinch, Brown HODMANS.—1, S. W. Thomas, 2 Mrs. Vallances, 3 J. W. Moly, FRENCH.—Any other variety.—1 and Cap. E. Burrell, 2 Do Fays, 3 Rev. J. H. Ward, LEGHORNS.—1 and Cap. G. C. Davin, 2 Rev. J. H. Ward, 3 J. T. Brevant, 4 H. E. Linton, 5 G. Munford, vhs. E. Thora, ANY OTHER VARIETY.—1, T. A. Bond, 2 J. T. Holmes, 3 Mrs. F. C. Davin, BANTAMS.—Black Reds.—1 and Cap. J. R. Robinson, 2 T. W. Anna, 3 W. White, vhs. E. Y. Atinch, Brown Reds.—1 and Cap. C. Davin, 2 Rev. J. H. Ward, 3 G. C. Adkins, Gold or Silver.—1 and H. Stephens, 2 and S. M. Leno, Any other variety.—1, T. F. Phelps, 2 Mrs. J. T. Holmes, 3 S. Clapham, vhs. G. M. Greville, G. Davis, GAME BANTAMS.—Any other variety.—1 and Cap. J. Beighton, 2 J. R. Robinson, SELLING CLASSES.—*Dorkings*, *whims*, or *Cochins*.—Cock or Cockerel.—1, Mrs. Malcolin, 2 Capt. Robin, 3 E. Scammell, *Hens* or *Pullets*.—1, P. Le Sneur, 2 R. Chesant, 3 T. Moly, *Any other variety*.—1 and Cap. J. Beighton, 2 J. Andrews, *Selling Class*.—1, W. Perron, 2 J. Bassett, 3 T. Hardy, *Hens* or *Pullets*.—1, J. Bassett, 2 W. A. Du Winden, 3 Miss H. Northcote, *Ducks*.—*Aylesbury*.—1 and Cap. J. H. Ward, 2 T. W. Anna, 3 W. White, vhs. E. Y. Atinch, *Parlett*, 2 Mrs. Radcliffe, 3 M. Sanford, *Black East Indian*.—1 and Cap. Mrs. Hayne, 2 S. Burr, 3 G. S. Sainsbury, *Any other variety*.—1 and Cap. E. George, 2 Lady Radcliffe, 3 J. K. Keble, *Any other variety*, Lady Marriott (2), *Selling Class*.—1, J. Hedger, 2 J. H. Hoid, 3 J. O. Sanders, *SELLING CLASSES.*—*Cochins*.—Cocks.—1, Cup and J. J. Baker, 2 and vhs. J. Harwood, *Hens*.—1, T. C. Burnell, 2 and S. J. Baker, vhs. J. Harwood, *Pouter*.—1, T. C. Burnell, 2 and S. H. Pratt, *Hens*.—1 and Cap. Mrs. Ladd, 2 Mrs. J. T. Holmes, 3 H. Pratt, *Trants*.—*Short-faced*.—1, Cap. and H. H. Yardley, 3 J. Baker, *Any other than Short-faced*.—1, R. J. Cole, 2 and H. O. Crane, 3 W. B. Marshall, 4 J. Jones, 5 G. O. Parsons, 6 J. O. Parsons, 7 H. Yardley, *Tamers*.—*Blue or Silver*.—1, J. Baker, 2 H. Draycott, 3 S. Satter, *Any other colour*.—1, T. C. Burnell, 2 O. E. Cresswell, 3 W. R. Rooton, *Archangels*.—*Red*.—1 and Cap. J. Beighton, 2 J. R. Robinson, *Selling Class*, vhs. J. Baker, J. Andrews, S. Atter, *Any other colour*.—1 and J. Baker, 3 J. Andrews, *Fantails*.—1 and 2 Rev. W. Serjeantson, 3 J. F. Lovelidge, 3 J. S. Satter, 4 J. R. Robinson, *Any other variety*.—1 and Cap. Mrs. Ladd, 2 S. Satter, 3 P. H. Jones, *Foreign*.—1, Cap. and J. Sparrow, 3 J. Baker, *Archangels*.—1, Cap. and S. H. Webb, 2 R. Wilkinson, *Extra*. 2 G. Paek, *Small*, *Swallows*.—1 and Cap. O. E. Cresswell, 2 G. O. Parsons, 3 G. O. Parsons, 4 A. Miles, 2 T. D. Green, 3 J. S. Prier, *Marble*.—1, Cap. S. Satter,

2 G. J. Dewey, 3 H. Rollison, *Tampzeras*.—1 and 2 J. Baker, 3 S. W. H. Thron, *Astwers*.—*Long-faced*.—1 and 2, C. F. Herriell, 3 B. Rawnsley, *Short-faced*.—1 and 2, J. Harwood, 3 J. Harwood, *Any other variety*.—1 and 2, Black-barred.—Cocks.—1 and S. W. Osmond, 2 T. C. Burnell, *Hens*.—1 and 2, S. W. Osmond, 3 T. C. Burnell, *White*.—Cocks.—1, 2, and 3, W. Bishop, 4 J. Harwood, 5 J. Harwood, 6 J. Harwood, 7 J. Harwood, 8 J. Harwood, 9 J. Harwood, 10 J. Harwood, 11 J. Harwood, 12 J. Harwood, 13 J. Harwood, 14 J. Harwood, 15 J. Harwood, 16 J. Harwood, 17 J. Harwood, 18 J. Harwood, 19 J. Harwood, 20 J. Harwood, 21 J. Harwood, 22 J. Harwood, 23 J. Harwood, 24 J. Harwood, 25 J. Harwood, 26 J. Harwood, 27 J. Harwood, 28 J. Harwood, 29 J. Harwood, 30 J. Harwood, 31 J. Harwood, 32 J. Harwood, 33 J. Harwood, 34 J. Harwood, 35 J. Harwood, 36 J. Harwood, 37 J. Harwood, 38 J. Harwood, 39 J. Harwood, 40 J. Harwood, 41 J. Harwood, 42 J. Harwood, 43 J. Harwood, 44 J. Harwood, 45 J. Harwood, 46 J. Harwood, 47 J. Harwood, 48 J. Harwood, 49 J. Harwood, 50 J. Harwood, 51 J. Harwood, 52 J. Harwood, 53 J. Harwood, 54 J. Harwood, 55 J. Harwood, 56 J. Harwood, 57 J. Harwood, 58 J. Harwood, 59 J. Harwood, 60 J. Harwood, 61 J. Harwood, 62 J. Harwood, 63 J. Harwood, 64 J. Harwood, 65 J. Harwood, 66 J. Harwood, 67 J. Harwood, 68 J. Harwood, 69 J. Harwood, 70 J. Harwood, 71 J. Harwood, 72 J. Harwood, 73 J. Harwood, 74 J. Harwood, 75 J. Harwood, 76 J. Harwood, 77 J. Harwood, 78 J. Harwood, 79 J. Harwood, 80 J. Harwood, 81 J. Harwood, 82 J. Harwood, 83 J. Harwood, 84 J. Harwood, 85 J. Harwood, 86 J. Harwood, 87 J. Harwood, 88 J. Harwood, 89 J. Harwood, 90 J. Harwood, 91 J. Harwood, 92 J. Harwood, 93 J. Harwood, 94 J. Harwood, 95 J. Harwood, 96 J. Harwood, 97 J. Harwood, 98 J. Harwood, 99 J. Harwood, 100 J. Harwood.

BIRDS.—*TRASH*.—1, Parsons, *GOLDFINCH*.—1, T. Wilbshire, 2 H. Wilds, *BULLFINCH*.—1, Mrs. J. T. Holmes, 2 N. King, *LARK*.—1, Master S. Osmond, 2 J. Singleton, *ANY OTHER VARIETY*.—1, Mrs. J. T. Holmes, 2 Miss Draycott, 3 Mrs. Bishop, 4 W. Edwards, 5 W. Edwards, 6 W. Edwards, 7 W. Edwards, 8 W. Edwards, 9 W. Edwards, 10 W. Edwards, 11 W. Edwards, 12 W. Edwards, 13 W. Edwards, 14 W. Edwards, 15 W. Edwards, 16 W. Edwards, 17 W. Edwards, 18 W. Edwards, 19 W. Edwards, 20 W. Edwards, 21 W. Edwards, 22 W. Edwards, 23 W. Edwards, 24 W. Edwards, 25 W. Edwards, 26 W. Edwards, 27 W. Edwards, 28 W. Edwards, 29 W. Edwards, 30 W. Edwards, 31 W. Edwards, 32 W. Edwards, 33 W. Edwards, 34 W. Edwards, 35 W. Edwards, 36 W. Edwards, 37 W. Edwards, 38 W. Edwards, 39 W. Edwards, 40 W. Edwards, 41 W. Edwards, 42 W. Edwards, 43 W. Edwards, 44 W. Edwards, 45 W. Edwards, 46 W. Edwards, 47 W. Edwards, 48 W. Edwards, 49 W. Edwards, 50 W. Edwards, 51 W. Edwards, 52 W. Edwards, 53 W. Edwards, 54 W. Edwards, 55 W. Edwards, 56 W. Edwards, 57 W. Edwards, 58 W. Edwards, 59 W. Edwards, 60 W. Edwards, 61 W. Edwards, 62 W. Edwards, 63 W. Edwards, 64 W. Edwards, 65 W. Edwards, 66 W. Edwards, 67 W. Edwards, 68 W. Edwards, 69 W. Edwards, 70 W. Edwards, 71 W. Edwards, 72 W. Edwards, 73 W. Edwards, 74 W. Edwards, 75 W. Edwards, 76 W. Edwards, 77 W. Edwards, 78 W. Edwards, 79 W. Edwards, 80 W. Edwards, 81 W. Edwards, 82 W. Edwards, 83 W. Edwards, 84 W. Edwards, 85 W. Edwards, 86 W. Edwards, 87 W. Edwards, 88 W. Edwards, 89 W. Edwards, 90 W. Edwards, 91 W. Edwards, 92 W. Edwards, 93 W. Edwards, 94 W. Edwards, 95 W. Edwards, 96 W. Edwards, 97 W. Edwards, 98 W. Edwards, 99 W. Edwards, 100 W. Edwards.

JUDGES.—*Poultry*: Mr. R. Teebay, Fulwood, Preston; Mr. J. Dixon, Bradford. *Pigeons*: Mr. W. B. Tegetmeier, Finchley. *Cage Birds*: Mr. G. Billett, Southampton.

ACCRINGTON PIGEON SHOW.

The first Show of the Accrington District Columbaria Society was held on the 19th and 20th inst. This Show was promoted principally by Mr. Sutherland, the Secretary, assisted, however, by a good Committee, and for a first attempt was most excellently managed. There were upwards of three hundred entries, which quite filled the room.

Pouters were good but few, and Carriers, though in the hands of but three exhibitors, were very good. In cocks Blacks won, and in hens Duns. The first in the latter class a ospital bird, on which we have often commented before as excellent in eye-water. In Barbs the winners were Blacks, the cocks all noticed. Mr. Yardley's grand hen was first in that class. There was a good class of young birds, though some exhibitors, the loers especially, contended that the winners were rather old-fashioned birds. In the collection of young birds the winners being Reds. First an exquisite little Red hen, the second and third cocks. In Owl first was the Silver so often referred to of late, the second an excellent Blue. In hens the winners were all Silvers, and many more deserved a place. Nuns and Magpies both very good; the winners in Magpies were all Reds. Almond Tumblers added another clean sweep to the Yardley loft, and in two cocks and one hen there was very little to choose. *Fantails* were superior. In *Dragoons*, Blue or Silver, Walton-on-the-Hill seems to be gaining ground, for here was scored another victory to that loft with a Silver first and a Blue second. The third, a little too large, was otherwise a fine one. In the next class a Red was first, and Yellows second and third; and in the young class first was a Yellow and second a Silver. *Dragoons*, any other colour, were—first Blue Queen, as also the second, and third a Grizzle. Antwerp were good in all classes, and in Shortfaceds we see a tendency to the correct type rather than to the mediums so often shown as Shortfaceds of late; and in Long-faces the style and colour is far in advance of what has been done for the last few years. In the Variety class first was a White Owl, second a Black Swallow, and third a White Owl; and in the Selling class first was a pair of Yellow *Dragoons*, second Black Barbs, and third Blue *Dragoons*. There was an excellent class of flying Pigeons, most of which were said to have done extraordinary distances; there were, however, some very likely birds.

PIGEONS.—*Pouters*.—Cock.—1 and 2 J. Kendall, *Hen*.—1 and 3 J. Kendall, *Carriers*.—Cock.—1, 2, and vhs. J. Kendall, 3 E. Dawson, *Hens*.—1 and 2 J. Kendall, 3 E. Dawson, 4 J. Kendall, 5 E. Dawson, 6 E. Dawson, 7 E. Dawson, 8 E. Dawson, 9 E. Dawson, 10 E. Dawson, 11 E. Dawson, 12 E. Dawson, 13 E. Dawson, 14 E. Dawson, 15 E. Dawson, 16 E. Dawson, 17 E. Dawson, 18 E. Dawson, 19 E. Dawson, 20 E. Dawson, 21 E. Dawson, 22 E. Dawson, 23 E. Dawson, 24 E. Dawson, 25 E. Dawson, 26 E. Dawson, 27 E. Dawson, 28 E. Dawson, 29 E. Dawson, 30 E. Dawson, 31 E. Dawson, 32 E. Dawson, 33 E. Dawson, 34 E. Dawson, 35 E. Dawson, 36 E. Dawson, 37 E. Dawson, 38 E. Dawson, 39 E. Dawson, 40 E. Dawson, 41 E. Dawson, 42 E. Dawson, 43 E. Dawson, 44 E. Dawson, 45 E. Dawson, 46 E. Dawson, 47 E. Dawson, 48 E. Dawson, 49 E. Dawson, 50 E. Dawson, 51 E. Dawson, 52 E. Dawson, 53 E. Dawson, 54 E. Dawson, 55 E. Dawson, 56 E. Dawson, 57 E. Dawson, 58 E. Dawson, 59 E. Dawson, 60 E. Dawson, 61 E. Dawson, 62 E. Dawson, 63 E. Dawson, 64 E. Dawson, 65 E. Dawson, 66 E. Dawson, 67 E. Dawson, 68 E. Dawson, 69 E. Dawson, 70 E. Dawson, 71 E. Dawson, 72 E. Dawson, 73 E. Dawson, 74 E. Dawson, 75 E. Dawson, 76 E. Dawson, 77 E. Dawson, 78 E. Dawson, 79 E. Dawson, 80 E. Dawson, 81 E. Dawson, 82 E. Dawson, 83 E. Dawson, 84 E. Dawson, 85 E. Dawson, 86 E. Dawson, 87 E. Dawson, 88 E. Dawson, 89 E. Dawson, 90 E. Dawson, 91 E. Dawson, 92 E. Dawson, 93 E. Dawson, 94 E. Dawson, 95 E. Dawson, 96 E. Dawson, 97 E. Dawson, 98 E. Dawson, 99 E. Dawson, 100 E. Dawson.

and the R. & J. Ercroyd, J. W. Walton, S. J. Gardner, *Long-faced*,—Cocks—1 and 2, W. Ellis, 2, J. C. Waterhouse, who R. & J. Ercroyd 60, W. Ellis, J. C. Waterhouse (2), *Hen*,—1, W. Ellis, 2 and 3, J. C. Waterhouse, who, W. Ellis, R. & J. Ercroyd ANY OTHER VARIETY,—Cock or Hen—1, R. & J. Ercroyd, 2, W. J. P. Mason, 3, Miss L. Lucas, 4, the London, 5, Miss L. Lucas, 6, the London, 7, *Pair*,—1, 2, and the W. J. Lucas, 3, Miss L. Gardner, LITTLEST BIRD FOR FLYING PURSUER,—1, G. Haydock, 2, J. J. Beldon, 3, E. Westall, 4, G. Haydock (2), W. J. Lucas (2).

JUDGES,—Messrs E. Hutton and W. Sefton.

THE BELGIAN HARE RABBIT.

The Belgian Hare Rabbit claims much attention owing to its value as food, as it averages a larger weight than most other breeds; its average weight is from 8 to 10 lbs. Its original home is on the Continent and it is not, as the name might seem to imply, a cross between the Hare and the Rabbit. Such crosses have been occasionally attempted, but have never been successful, the progeny, whenever the cross has been effected, being an infertile mule. The name Hare seems rather to be present as a sign that resemblance to that animal must be cultivated in breeding. The breed is now kept to a considerable extent, although till lately it has not been popular.

The Belgian Hare should possess a large bony frame, well proportioned, but slightly inclined to be lengthy; the head of fair size, and the face long and nose sharp. The colour should resemble that of the Hare—i.e., it should be of a brown grey colour, or more correctly speaking a red grey. The animal is always of one colour, though of course the shade will vary. The back and rump will be darker than the sides, and this may be considered an advantage rather than otherwise. The under parts will be much lighter, in some cases approaching pure white. However this may be, it is imperative that there should be no white visible when the animal is either standing or reclining. If there be any it will most decidedly destroy the animal's chance of success at any show. The legs, in accordance with the shape of the body, should be firm and well set. In colour the outsides should be grey and also the insides up to the first joint; above this the colour is generally lighter, and sometimes almost white. Neck long and of a uniform grey colour. The head and face is also of this colour, the throat being generally a trifle lighter than the face. Ears long, but quite upright; they are of a dark grey shade, and there is a black streak going up the side. This streak is very important, as both showing off the animal and indicating breed.

The specimens of this breed should possess a fair-sized dewlap. There has been much controversy on this head, but the majority of fanciers seem to be breeding in this direction. A glance at the merits and demerits of it may not be amiss. In the first place, it is urged against it that the Hare never has a dewlap, and that the merits of a Belgian consist in the resemblance it bears to this animal. This is true no doubt, but the advocates of the dewlap reply, Neither does a Hare arrive at the weight of 10 and 12 lbs., and if the dewlap is to be done away, reduce the size upon the same principle. No one will be disposed to do this latter, and hence the question of dewlap is undecided. Then, again, is not dewlap the result to some measure at least of good food and attention? Take two young Lops from the same litter and let them be reared by two different persons, one by an experienced Lop breeder, the other by an embryo connoisseur, and when twelve months old compare them. Number 1 will be fat and well dewlapped, while number 2 will be thin and without any signs of that appendage. Are we then to condemn the natural results of good care and attention? Both the dewlap and increase in size are simply and solely the result of domestication, and they must stand or fall together. If the dewlap is wrong, size is wrong too, and the objectors to the appendage will hardly care to have the latter done away with upon the same principle as the former.

The general appearance of the Belgian Hare is thus very easily described—a large roomy frame, large head and legs, long but upright ears, a clear fawn eye. The colour we have said is grey. The only parts that can legitimately be of any other colour are the under portions of the body extending sometimes slightly down the inner sides of the legs, the lower portion of the tail and some parts of the throat, although this latter must not be of sufficient quantity to be visible except on close examination; it is, in fact, best away altogether. The following is an easy scale of points; it takes in most of the properties, but if any reader can suggest an improvement, if he will kindly write a short note on the subject he will be doing a good deed, as the properties are by no means thoroughly acknowledged among fanciers nor are the relative values of them plainly fixed:—

Colour	15
General shape	10
Shape of head	5
Ears	7
Eyes	5
Underparts	3
Condition	5 = 50

The Belgian Hare is not a Rabbit that would be selected as a

pet so much as several of the other varieties, because in the first place it is not particularly docile, and in the second place because although it is handsome it is not by any means pretty. The breed cannot be said to be very prolific, the litters not being large or frequent. The young are pretty hardy at birth and grow very rapidly, and after a few days become strong and hardy. They are not so much subject to the usual intantile complaints that work such slaughter among young Rabbits in general. The litters will average from three to six, and the doe will breed three or four times a year. They can then only be spoken of as not prolific in a comparative sense, as twenty young ones may be annually reared from each pair; and although double that number can be produced from some does, I think but few will raise a greater number. For a few weeks the young present the appearance of ordinary hutch Rabbits, and it is not till they are a couple of months old that the ear tipping, &c. are apparent, and these are the great indicators of the breed.—G.T.A.

HIVES AND LOCALITIES.

Your correspondent Mr. Lowe is quite right in saying that the question of hives crops up to the surface now and then, and as it is one of some importance, often viewed from different standpoints, the discussion of it generally commands the attention of a large circle of readers. Amongst practical bee-keepers the subject is always interesting if handled in good temper. It is to be regretted that parties differing in opinion have not always abstained in their discussions from the use of harsh words. If it is beyond the power of apiarians to keep fool brood out of their hives, surely it is not beyond their power to keep it out of their communications.

It is well known that I use hives that are capacious and comfortable, simple in construction, low in price, and passable in appearance. Hives possessing these points compass all I want. In the breeding seasons bees should have room for setting and hatching the eggs, laid by their queens, and space enough for honey as well. As for comfort and convenience I have never seen any better than good straw hives. I have never found hives made of other materials that allowed the moisture of bees to escape readily and without injury to the combs. At certain seasons materials other than straw condense the moisture on their inner surfaces. Many plans and experiments have been tried to prevent the condensation of moisture on the inner sides of wooden hives. "The Quilt," which is an American idea, has been tried in this country without success so far as I know. Mr. Yates of Manchester felt sure that he would succeed by covering his wooden hives with boiler felt, which is warm stuff about 2 inches thick. This did not answer. Ventilating holes in the sides and crowns of hives have been tried with greater but not complete success. I believe that the question of ventilation will receive greater attention by-and-by than it has done in the past. During the summer, when the heat of hives is very great, their internal moisture is driven out through their doors by the heat and natural ventilation of the bees; but in spring and autumn the sides of wooden hives are often streaming with condensed moisture. I hope that a cheap and satisfactory mode of ventilating wooden hives may soon be discovered and made widely known.

A few weeks ago the readers of this Journal were favoured with the records of capital results in bee-keeping from hives of various kinds. Mr. Briscoe of Albrighton obtained 144 lbs. of super honey from a Stewarton live. The story of his success appeared in the Journal of October 12th. The week following Mr. P. H. Phillips of Hitchin told us through the same channel how he obtained 131½ lbs. of honey in supers from a straw hive; both gentlemen are advanced and clever bee-keepers. It will be observed that the straw hive was 12½ lbs. short in super honey of the Stewarton live. Now let me here say, that if the Stewarton had been 12 or 20 lbs. short of the straw hive I would not have ventured to say that the greater result was due to the hive, for one hive may have been stronger at the commencement of the season, or it may have fed on better pasture than the other. A small field of white clover near one of the hives may have given it the advantage and victory. Rain often hinders bees in one county, while sunshine helps them in another. The hives of both gentlemen swarmed in the middle of summer or honey season, and as both gentlemen are experts they cut out the royal cells containing young queens (from the mother hives) and returned the swarms to them. This operation of cutting queen cells out of hives after swarming is easily done.

I will now attend to the following question:—If you have been comparing hives that belonged to gentlemen living in different parts of the country; will you please to notice the difference of the results between the Stewarton and the straw hives of the 'RENFREWSHIRE BEE-KEEPER.' In 1875 the Stewarton hive of this gentleman yielded 68 lbs. of super honey. The straw hive standing beside it yielded only 2½ lbs. The straw hive after yielding the 2½ lbs. of super honey was, we are told, in a starving condition. When I read the letter of your Renfrewshire correspondent it struck me that the one hive was healthy and

the other was not. If both hives were healthy the question of "W. J. C.," page 563 (a correspondent unknown to me), has hit the mark exactly. He asks what the bees in the straw hive were doing while the Stewarton gathered 68 lbs. May I not venture to assert that never before has it been known that the bees of healthy hives filled a super of 20 lbs. while the cupboards below were quite empty? Charity begins at home, even in a bee hive. We know that in Lanarkshire and other parts of Scotland swarms in straw hives and the stocks that yielded them in 1875 rose to 70 lbs. or thereabouts, whereas the straw hive of your Renfrewshire correspondent, which never swarmed at all, was at starvation point after its super of 20 lbs. was removed. If our friend is correct in tracing this failure to the materials or construction of the hives, and if his logic is trustworthy, we may safely conclude that Mr. Phillips, who obtained 131 lbs. of super honey from a straw hive in 1876, would have obtained nearly 400 lbs. of super honey if his bees had been in a Stewarton hive instead; and what would Mr. George Fox say if he were told that he would have obtained three supers in 1876, each 86 lbs. in weight, if his bees had been working in a Stewarton hive instead of a straw one?

While writing these last few lines the post has brought me a letter from a gentleman in Cambridge asking where straw hives can be obtained. Having made a few complimentary remarks about me and my book, he puts the following question—"Do you, after seeing the reports of the large takes of honey from the Stewarton hive, still adhere to your first preference to straw? All other modern books on bees which I have read speak little or nothing of the hives, and if his logic is trustworthy, we may safely conclude that Mr. Phillips, who obtained 131 lbs. of super honey from a straw hive in 1876, would have obtained nearly 400 lbs. of super honey if his bees had been in a Stewarton hive instead; and what would Mr. George Fox say if he were told that he would have obtained three supers in 1876, each 86 lbs. in weight, if his bees had been working in a Stewarton hive instead of a straw one?"

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polling of his hands coming into possession, was the Stewarton with all its parts moveable, and he sticks to it.

ENING AND ITS CONSEQUENCES (E. G., Co. Down).—By king you presented your bees from swarming in the summer of both 1876 and 1876. Your hive is now a large heavy one, but if you had let the bees swarm last year you would have had two or three stocks instead of one. Abstain from king this year, and let the bees swarm twice if they will. About three weeks after the first swarm are obtained drive all the bees out of the old hive into an empty one, and take the honey. The combs in it are old and black, and the queen too.

ERBATICM.—"A Bee-keeper's Retrospect," page 53, read *schools* instead of *schools*.

FINE BOARDS FOR HIVES (J. M.).—Thick-wooded hives are an exploded idea. Bees and their combs are not dried and best in hives of pine wood five-eighths of an inch or so thick, always provided they have thorough external protection from the weather by means of an outer case of wood, good straw hackle, or other efficient protector to cover all the hive saving the entrance, and run off all moisture.—A RENFREWSHIRE BEE-KEEPER.

FLOWERS FOR BEES (F. F.).—Farrar being a honey plant in the second or third class was not named in the list of first or second class of honey-producing plants which you refer to. You think some of your snipers were filled with honey gathered from the furze bushes growing on a heath between one and two miles distant from your garden. Very likely some of the honey was brought from the heath or grown growing on the heath, but we are of opinion that most of the honey of your snipers was gathered from other kinds of plants. Bees that work on broom and furze are well waded over with pollen, and appear as yellow as soldiers and dusty as millers.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.		Rain.	
	Baromet. at average Level.	Hygrometer.	Direction of Wind.	Shade Temperature.		Radiation Temperature.
1877.		Dry. Wet.		Max. Min.	In sun. On grass.	
Jan.	Inches.	deg. deg.		deg. deg.	deg. deg.	In. deg.
We. 17.	30.250	31.7 44.2	S.W.	46.3 47.3	62.1 62.1	55.5 0.059
Th. 18.	29.288	45.2 44.2	S.	44.0 51.8 39.8	63.8 34.7	0.672
Fr. 19.	29.273	55.3 52.2	S.W.	45.2 56.8 45.0	59.0 42.6	—
Sa. 20.	30.282	45.3 44.2	S.W.	45.5 41.5 38.3	65.1 41.2	—
Sun. 21.	30.649	35.0 33.0	N.E.	41.0 47.7 30.5	70.6 27.5	—
Mo. 22.	30.614	36.4 35.7	S.W.	40.5 47.7 32.1	64.1 27.1	—
Tu. 23.	30.486	34.5 35.2	S.	39.0 45.9 38.5	68.0 25.4	0.099
Means.	30.211	42.5 41.5		43.6 45.9	63.0 41.0	95.0 0.242

REMARKS.

- 17th.—Dark showery day, but a starlight night.
- 18th.—Another day and night bright.
- 19th.—Wet calm; dry and windy after and in the night.
- 20th.—A dry and very pleasant day, colder towards night; barometer unusually high; a fine sunset, and a bright starlit night.
- 21st.—A very dense fog, particularly so from 10.30 to noon, then cleared off, but left a very bright pleasant afternoon, evening, and night; haze halo.
- 22nd.—Slight white frost in morning, followed by a bright sunny day.
- 23rd.—White frost and rather foggy early, but again followed by a very bright pleasant sunny day.

First half of week damp, and uncomfortable; the last three days very pleasant. Temperature about 3° above last week.—G. J. SYMONS.

COVENT GARDEN MARKET.—JANUARY 24.

The supply of early forced vegetables, such as Asparagus, Spinalke, New Potatoes, and Rhubarb, is now very general, and prices low; but Cucumbers, owing to so much dull weather, are short, and in good demand. Late Apples are in fair request at firm rates; Kent Cobs quiet.

FRUIT.

	s. d. a. d.		s. d. a. d.
Apples.....	dozen 3 6 to 7 0	Nectarines.....	dozen 0 6 to 0 9
Apricots.....	dozen 0 0 0	Oranges.....	dozen 1 0 to 1 2
Chestnuts.....	bushel 0 0 0	Peaches.....	dozen 0 0 0
Currants.....	a sieve 0 0 0	Pears, kitchen.....	dozen 1 0 0
Black.....	a do. 0 0 0	.....	dozen 1 3 0
Fire.....	dozen 0 0 0	Pine Apples.....	dozen 1 6 0
Filberts.....	lb. 0 0 0	Plums.....	a sieve 0 0 0
Cobs.....	lb. 1 0 1 6	Quinces.....	bushel 0 0 0
Gooseberries.....	dozen 0 0 0	Raspberries.....	dozen 0 0 0
Grapes, hothouse.....	lb. 2 0 0	Strawberries.....	lb. 0 0 0
Lemons.....	per 100 6 0 8	Walnuts.....	bushel 5 0 0
Melons.....	each 1 0 2	.....	per 100 1 2 0

VEGETABLES.

	s. d. a. d.		s. d. a. d.
Artichokes.....	dozen 6 0 0	Mushrooms.....	per 100 6 0 0
Asparagus.....	per 100 8 0 10 0	Mustard & Cress.....	pettles 2 0 2 0
French.....	bushel 0 0 0	Onions.....	bushel 0 0 0
Beans, kidney.....	per 100 0 6 0	Peas.....	quart 4 0 6
Best, Kid.....	dozen 1 6 0	Parley.....	doz. bushels 2 0 0
Broccoli.....	bushel 0 9 1 6	Parsnips.....	dozen 0 0 0
Brussels Sprouts.....	dozen 1 0 0	Peas.....	dozen 0 0 0
Cabbage.....	dozen 1 0 0	Potatoes.....	bushel 2 6 4 6
Carrots.....	bushel 0 4 0 8	Kidney.....	do. 8 0 5 0
Cauliflower.....	dozen 2 0 0	New.....	lb. 0 0 0
Celery.....	bushel 1 6 2 0	Radishes.....	doz. bushels 1 0 1 6
Coleworts.....	doz. bushels 2 0 4 0	Rhubarb.....	bushel 0 0 1 6
Cucumbers.....	each 1 6 0 0	Salads.....	bushel 0 0 0 0
Endive.....	dozen 1 0 0 0	Seakale.....	bushel 0 0 0 0
Fennel.....	bushel 0 0 0 0	Shallots.....	lb. 2 0 6 0
Garlic.....	dozen 1 0 0 0	Spinach.....	dozen 0 0 0 0
Herbs.....	bushel 0 0 0 0	Tomatoes.....	a sieve 0 0 0 0
Horseradish.....	bushel 4 0 0 0	Turnips.....	bushel 0 4 0 0
Lentils.....	dozen 0 0 0 0	Vegetable Marrow.....	0 0 0 0
Leeks.....	bushel 0 4 0 0		

OUR LETTER BOX.

CHUELY (Hub-a-lub, &c.).—We must decline entering upon the subject. It would include topics from birds in cages to horses in harness.

BEARNA HEN (J. A. Bames).—The symptoms (drooping of the head and walking backward) demonstrate that she has a pressure on the brain. She is probably too fat. Give her a dessert-spoonful of castor oil, and keep her on low soft diet—two-third barley meal and two-thirds pollard mixed together with water.

COCKSHEL (Crib).—He has a catarrh. Let him eat only in the middle of the day. Give him a dessert-spoonful of castor oil, and feed him only on soft food—barley meal.

SILKIES (E. B. Norrick).—The most likely way to find purchasers will be by advertising the birds. A wry tait in the Hamburg cockerel is not likely to become straight.

SCHEDULE OF THE AQUARIUM UNITED KINGDOM POULTRY AND PIGEON EXHIBITION.—We are informed that Cape No. 6, and 7, value five guineas each, are for Dark and Light Brahmas respectively.

HIVE (Ed).—After prolonged trials of many hives and systems, storing and wintering, the Renfrewshire Bee-keeper found the one that yielded the largest harvest of pure honeycomb and consequent profit, with least expenditure of time-watching, the least disturbance of the stock, and

WEEKLY CALENDAR.

FEBRUARY 1-7, 1877.

Day of Month	Day of Week		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.		
1	TH	Royal Society at 8.30 P.M.	44.4	32.0	38.2	7 40	4 47	9 31	8 54	18	18	55	32			
2	F	Royal Institution at 8 P.M.	44.6	31.5	38.0	7 40	4 49	10 55	9 16	19	14	2	33			
3	S		45.0	30.7	37.9	7 37	4 51	more.	9 19	20	14	8	34			
4	SUN	SEKAGESIMA.	45.0	30.5	37.9	7 36	4 53	0 18	9 34	21	11	14	35			
5	M	London Institution at 5 P.M.	45.7	30.5	38.6	7 34	4 55	1 39	9 52	(	11	19	35		
6	TU	Dr. J. Priestley died, 1804.	46.5	32.6	39.6	7 32	4 57	2 53	10 16	23	14	22	37			
7	W	Society of Arts at 8 P.M.	46.9	33.0	39.9	7 31	4 58	4 11	10 50	24	14	25	38			

From observations taken near London during forty-three years, the average day temperature of the week is 46.1°; and its night temperature 32.8°.

FORCING POTATOES, CARROTS, AND DWARF KIDNEY BEANS.

POTATOES.—These are often planted in large forcing establishments earlier than the present time; but I have always found the best results follow from tubers which were planted after the new year has commenced, for then they grow freely from the first, and there is not so much danger of their being checked when advanced in growth as those which are planted early in a place where there is no artificial heat.

I do not start my tubers into growth, as some of your correspondents have recommended lately. Previous to planting the sets are spread out in a shelved shed, where there is plenty of light. The sprouts are only about 1 inch long when planted, and instead of being weak and tender (like those started in heat before planting) they are strong and hardy, and always grow away without receiving the slightest check; and it is difficult to avoid checks with tender drawn-up growths. Anyone with a three-light frame and a cartload or two of leaves and stable dung may have young Potatoes in May. We have finished putting in ours a day or two ago, but Potatoes put in now, or during the next week, would come in about as early. The leaves and manure should be mixed up in a heap in about equal parts, or there may be more leaves than dung. Let the heap lie until fermentation begins, which will be in three or four days. Turn it then, and in two days afterwards it may be put in the frame. When placed in the frame the heating material should be at least 2 feet deep and firmly trodden down with the feet. Above this place 12 inches of common garden soil mixed with a little of the decayed manure which was used for planting or forcing the year previous. When all is filled in the surface of the soil should be from 15 to 18 inches from the glass and quite level.

Place the tubers in the soil 6 inches from the surface. When this has been done put on the sashes, but open them a little on all fine days, closing them again at night, and unless in frosty weather never cover the glass. As soon as the leaves are seen above the soil give a thorough watering. When the growths are a few inches long the sashes may be removed altogether on fine days when the wind is not "cutting." The frame should always face the south so as to catch all the sun heat. Kidneys that do not produce big haulms may be planted 15 inches apart between the rows and about 4 inches between the tubers. Round sorts must have a little more room. My favourite varieties for forcing or planting at this time are Veitch's Improved Early Ashleaf, Myatt's Prolific Ashleaf, and Early Frame. I never earth-up my frame Potatoes. Giving air and water when required is the whole of the attention they receive from the time they are planted until they are lifted for use.

CARROTS.—These are sown about the same time as the Potatoes are planted, and they are ready for use equally early. The hot manure for both is mixed in the one

heap, but 1 foot deep of it is sufficient to bring up and on the Carrots. It is put in the frame as for the Potatoes, but not so far from the glass. The soil used is a light leaf soil and sandy mixture, and this only to the depth of 6 inches. When ready for sowing the surface of the soil is 1 inch from the glass. I use the Early Horn. It does not grow large, but the roots are always clean, tender, and of excellent flavour. The seed is sown broadcast, and covered over with half an inch of the mixture similar to that underneath it. If the seed is good sow thinly. Do not water until the young plants are visible, and very little air need be given until then. Thin out the plants before they are crowded, leaving them 2 inches apart; do not let them suffer for want of water afterwards, and admit abundance of air on all favourable opportunities. In drawing them for use, pull out the largest and let the smaller have more room to develop.

DWARF KIDNEY BEANS.—These require more accommodation than either of the foregoing, but at the same time they may be grown from now onwards with less trouble and more success than some may suppose. We have gathered pods as early as this, but they were neither so fine nor so abundant as from those raised by sowings in January, February, and March. I have tried a good many sorts of these Beans for forcing, and I have now limited myself to Osborn's Forcing. This is a first-rate sort in every way. Three dozen pots supply a good quantity of Beans. The pots used are 8 inches in diameter. A few crocks are placed at the bottom of each, and the pots are half-filled with a compost consisting of light loam and leaf soil; this is pressed down firmly, and eight or ten seeds are laid over the surface and covered with 1 inch of soil. When the soil is moist no water is given until the rough leaves appear. The plants grow freely in a temperature of 60°. Much water must not be given at first or it will rot the young plants. While growing let them have all the light possible. The above-named temperature suits them throughout.

As soon as the leaves are fairly above the pots the remainder of the soil that is required to fill the pots must be added. Press this very firmly, and let it be a little lighter than that used at sowing time. When the plants come into bloom they are benefited by a little air every day, but this must depend on the outside weather. A few birch twigs put in as the plants ascend saves them from falling over, as they are liable to do as the fruit swells. Red spider is sometimes troublesome, but syringing never fails to keep it in check. Pods may be gathered five weeks after sowing the seed.—A KITCHEN GARDENER.

LOTHIAN STOCKS.

No Stocks are more valuable for winter, spring, and summer decoration than are these. Sowing the seed in July and August has been frequently recommended, but I find, after many trials, that those periods are too late for producing the best display of which these sweet and massive flowers are capable.

It may be well to explain what I mean by the "best

display"—I mean large plants of double white, purple, and scarlet Stocks in the depth of winter. It is easy to obtain Stocks in spring and summer, and even at those seasons they are beautiful when the plants are well grown; but they are far more attractive from November until April, and withal they are easily produced at that period. When the sowing of Lothian Stocks is deferred until July or August the plants do not flower until late in the following spring, continuing through the summer precisely when other Stocks are plentiful. The true Lothian Stock, it should be remembered, requires a longer period of growth before flowering than does the ordinary type of the Intermediate Stock; the Lothian also lasts considerably longer after it commences flowering than the London Intermediate—indeed longer than does any other Stock in cultivation.

Seed sown in February or early in March produces plants which, if well managed, commence flowering about July and continue until destroyed by frost. Such plants make most effective beds in the flower garden—beds as decided in their beauty and lasting as long as any other "bedding plants." As thus managed Lothian Stocks are very valuable. July and August sowings, as has been mentioned, produce plants which flower in spring, lasting also a considerable time; but the time of sowing for producing the "best display" I have found to be April, say, for the purpose of fixing it on the memory, on All Fool's-day. By sowing at that time I have had plants in 8-inch pots—plants 18 inches high and about as much in diameter, perfect masses of double white and scarlet flowers (the purple is not so effective during winter) at Christmas and onwards until April. It is not necessary to dwell on the value of such plants for affording an abundant supply of cut flowers of the first order of merit, neither is a laboured eulogium necessary as to the commanding effect of the plants in the conservatory. At their period of flowering few plants can equal them, none surpass them.

My plan of raising the plants is to put up a bed of leaves and litter about 2 feet high, nail four boards together to form a rude frame, and cover the bed with frame lights. Four or 5 inches of soil is placed on the bed, and in this the seed is sown thinly, very thinly, in drills. The plants are thinned to an inch or more apart as soon as they can be handled, and the glass is removed entirely during favourable weather. About the middle or towards the end of May the plants are very sturdy, and are potted into small pots just vacated by bedding plants. In these small pots the plants remain until they show flowers, when the spike of each double flower is cut off. Side shoots speedily grow, and as soon as these are seen the plants are potted firmly in rich soil in their blooming pots. These are placed on a hard bottom so that the roots cannot penetrate into the ground to any great extent, and a little litter is placed between the pots to aid in keeping the roots cool and moist. The plants are subsequently treated as to watering the same as are *Chrysanthemums*, giving them liquid manure occasionally. They commence flowering in October, and an inch of the surface soil is then removed from the pots and replaced with a rich top-dressing after the manner of surface-dressing fruit trees in pots. The plants are then placed under glass and in a minimum temperature of 45° to 40°. They flower splendidly all the winter.

That is the best way that I know of producing the "best display" of Lothian Stocks. The plan is applicable to most gardens, and when plants are well grown they are worthy of a place in the most choice collection of conservatory plants during the winter months.—A NORTHERN GARDENER.

PRUNING VINES.

SOME Vine-growers in giving directions for pruning lay down one rule as suitable to all the varieties of Grapes; but there are exceptions to all rules, and Grapes, such as Muscats and a few others, require different treatment from Black Hamburgs in the way of pruning. This productive and useful Grape does very well with close pruning, but I have always found Muscats to succeed best by leaving two or three eyes to the spur, of course rubbing off all but one when it could be discerned which was best. I have even in some cases left a side shoot from 1 to 2 feet in length, and when I see a bud on any favourable portion of the rod between the spurs I encourage its growth, supposing I have space for two or three leaves. By doing this the spurs never become unsightly, and besides it promotes the health and vigour of the Vine.

I may add for the benefit of some of the amateur readers of the Journal that I have always found Tynningham Muscat

easier to manage than Black and White Frontignan and a few other inferior sorts, and it is superior to both Grapes named in appearance and flavour. I do not say Muscats are so easily managed as Black Hamburgs and a few other Grapes, but certainly they are not so difficult as many are led to believe. Anyone in possession of a vineyard may grow Tynningham Muscat, which is one of the finest flavoured white Grapes in cultivation. I have grown it for nearly fourteen years, and during all that time its productions have been most satisfactory.

In the above remarks I allude to mixed houses: in large establishments where a whole house can be devoted to the growing of Muscats no doubt they can be brought to a higher state of perfection, but few have such accommodation; therefore I hope what I have stated may be of service to some amateurs. The pruning of Vines should now be completed as speedily as possible.—J. DICKSON.

EARLY BRUSSELS SPROUTS & CAULIFLOWERS.

A LETTER from Mr. R. Gilbert, Burghley Gardens, has been sent me by the Editors of the *Journal of Horticulture*, from which I make the following extract—"A MARKET GARDENER," on page 26, says he sows Brussels Sprouts in September. I have done the same for three years in succession, but my plants have run to seed. Sowing in February in beds slightly heated is a plan I follow yearly with the best results."

My reply to that is, that only during one year out of more than a dozen have my autumn-sown Brussels Sprouts run to seed, and that year I sowed earlier than usual, and the winter, like the present one, was unusually mild. The plants were very large—too large—when planted in April, and, like my autumn-sown Cauliflowers, the crop was a comparative failure. I fear that I am much in the same position this year, but inadvertently omitted saying so. It was, however, because of the prospective failure of my autumn-sown plants of both Brussels Sprouts and Cauliflowers that I laid stress on the importance of sowing seed under glass in January.

My plants are much too forward this year, as are those of many others. It has been impossible to prevent the plants from growing too large during the winter, and I much fear it will be equally impossible to prevent the Cauliflowers from "buttoning" and the Brussels Sprouts from "running" during the ensuing spring and summer. I would send Mr. Gilbert a few plants, but as I anticipate they will most of them "run" it would be useless my doing so. That, as before stated, is why I urged as important the raising of plants under glass by sowing a little seed at the present time of both Brussels Sprouts and Cauliflowers.

These are important vegetables, and the value of the crops is enhanced by having them ready for use early in the season. It is very common to sow Cauliflowers in gentle heat at the present period of the year, but not nearly so common to raise Brussels Sprouts at the same time and in the same manner, yet I have always found the latter crop as valuable as the former. By sowing seed of Brussels Sprouts in September I have been able to produce an ample supply of this esteemed vegetable early in August. At that period of the year Peas have sometimes been scarce owing to drought, and also by the same cause have Cauliflowers: the "Sprouts" have consequently been specially acceptable.

I am glad to have received Mr. Gilbert's suggestive letter in reference to the running of autumn-sown Brussels Sprouts. The matter is one of considerable moment and worthy of being more particularly alluded to. The primary cause of the plants running is their being too large at the time of planting them. The larger the plant the greater usually is the check it receives by its removal. Smaller plants, however, will run if not carefully managed. If the plants are denuded of a large portion of their fibres in the course of removal, and sunny days and frosty nights follow their planting, the plants wither considerably and their stems become hard—"woody." Such plants are very liable to run whether they have been sown in the autumn or have been raised under glass early in the spring. The great point to secure is to keep the plants steadily growing and their stems succulent. In a winter like the present it has been impossible to keep the plants "steadily" growing, for they have grown rapidly and are now dangerously forward.

I sow my Brussels Sprouts late in September. The plants do not grow so quickly as do Cauliflowers, and at this period of the year plants of the former are generally quite small. During February or early in March, according to the weather, a few for the first crop are selected and are pricked into square

inverted turves—turves from the roadside cut into small squares of 3 or 4 inches in diameter, a plant being placed in the centre of each square of turf. These are placed nearly close together, and leaf soil is sprinkled in the interstices between the turves. The plants are then protected with glass for a short time, and afterwards with mats when the nights are cold. The plants are in splendid condition for finally planting at the end of April, and receive no check by removal or a term of bright sunny weather, and in ordinary seasons they do not "run." I adopt that plan also with plants raised in heat in spring and with *Calliflower* plants similarly raised, and I can recommend the practice as being worthy of general adoption. I formerly (as do many gardeners) potted a portion of my early *Calliflowers* and *Brussels Sprouts*, but since I have proved the value of the turves pots are used for other purposes. The plants thrive better in turves than in pots, and become more quickly established when planted out. The little trouble necessitated in carrying out the plan is trifling in comparison with the great advantages eventually resulting.

—A MARET GARDENER.

CLIMBING ROSES.

THE interesting article on page 41 of the *Rose Journal* on climbing Roses will be read by many with delight; but I venture to think the great majority of your subscribers will regard the author with compassion as one who, while he may drink *Cabateau Lafitte*, is content to quaff huge tankards of sour cider.

Fancy *Amadis*, *Thoresbyans*, *Alice Gray*, *Félicité Perpetua*, and *Dandee Rambler* occupying space which may and should be covered by *Cloth of Gold*, *Maréchal Niel*, *Madame Trifle*, *La Belle Lyonnaise*, *Solfaterre*, *Climbing Devoniensis*, and *Cheshunt Hybrid*. What is a bushel of *Crab Apples* compared with a handful of *Ribston Pippins*? What difference is there, too, between the free-flowering propensities of any of the above-named varieties when once established and even *Alice Gray*? Why, you might as well plant wild *Briars* against your church as *Alice Gray* and *Bennett's Seedling*. I am not speaking without good reason, for I have grown all the sorts which the "PARSON'S GARDENER" names. Though a "WILD SAVAGE," I am a shepherd of the sheep, and a parson's gardener also, inasmuch as I am my own head gardener and a parson to boot. When I first came here I planted all the climbing Roses named by "A PARSON'S GARDENER" against my church in order to have *Roses* as quickly as possible; but when these plants bloomed—and they did bloom in a manner perfectly wonderful—the blooms individually were not worth looking at. The effect from a short distance was grand and worthy of all the encomiums of your correspondent, but when you have said that you have said all. The blooming season, too, is so short that for about ten months of the year your walls are destitute of a single flower. I soon pulled up my plants and gave them away; and now let me tell "A PARSON'S GARDENER" those I have replaced the summer *Roses* with.

On the east wall is *Cloth of Gold* and *Clematises Jackmani* and *Prince of Wales*. On the south wall of the chancel *Maréchal Niel*, *Cheshunt Hybrid*, and *Cloth of Gold*, together with *Passiflora carnea*, *Clematises Rubella*, *Miss Bateman*, *Lady Caroline Nevill*, and *Lady Lonsdaleborough*. On the south side of the nave, *Solfaterre (Noisette)*, *Climbing Devoniensis*, *Madame Trifle*, *La Belle Lyonnaise*; *Clematises lanuginosa nivea*, *Standishii*, and *Albert Victor*. On the north side of the church I friskily own I do not attempt to grow anything, and perhaps I might place *Amadis*, *Alice Gray*, &c.; but I do not think even these hardy summer *Roses* would do well there, as huge *Conifers* so shut out the light that it would be hopeless to attempt it.

I wish "A PARSON'S GARDENER" would pay me a visit in June and I would return the compliment, and then we could compare notes and see which system answered best.—WILD SAVAGE.

INSECTICIDES.

THE sulpho-carbonate of potash has for some years been considered in France as the best insecticide, and is, I presume, easily obtainable in Paris, and at a reasonable rate. But as I never see in England any advertisement on the subject, I imagine it is either unknown in the trade, or else sold under a fanciful name as one of the numerous high-priced nostrums. I should like to know whether it possesses any advantage over the

sulphuret of lime so long known, and the recipe for which has so often been given in your columns.—G. S.

THE LILY.

I QUITE agree with "G. S." in your number of the 7th September last that the continued importation of *Lilium auratum* is surprising, for the sale of several thousands of bulbs in one day in an auction room has for many years past been an ordinary occurrence. But when he asks, Where are they now? I am not surprised when he himself replies, Why, dead.

An immense number of the imported *Lilies*, as "G. S.'s" experience shows, are worthless to the amateur. In fact, they can be of no value to anyone but the nurseryman, who has room to spare and can afford to plant them out for a season or two; weeding out from time to time the dead and the dying, and replanting the better bulbs. By doing this, and purchasing them in the first instance "for a song" as the auctioneer says, the nurseryman is able to supply good bulbs at a moderate price. I think this is borne out by Mr. T. Clements, who, in his communication to you on the 21st of September, stated that the bulbs procured from a nurseryman flowered the first year after planting, and every year increased in strength and number of flowers. I will venture to say that they were not newly imported.

I now wish to correct what I consider to be a very grave mistake, and one that goes to the root of all improvement in *Lily* culture. We often hear remarks somewhat like the following: "Last year one of my bulbs sent up a flower-stem 5 feet high, and this year the same bulb threw up one 7 feet high crowned with thirty flowers." Remarks like these are calculated to mislead, for the same bulb did nothing of the kind. It was the successor of the former bulb that produced such a display, for a *Lily* bulb can only flower during one season. It is a mistake, then, to offer bulbs which are stated to be one, two, and three years old. The size of the bulbs are not increased by age merely, but by culture. This is exemplified to a great extent by what Mr. Clements has stated. He planted bulbs of *L. auratum* among his *Rhododendrons*, the soil consisting of sandy loam and peat together with a quantity of white sand; and "the first year after planting they made a good display, and every year increased in strength and number of flowers." This is the secret—congenial soil.

The question arises, How long should the bulbs be allowed to remain in the ground without being taken up and replanted? *Lilies* are such gross feeders that they soon impoverish the soil; and those which produce many offsets impoverish the parent bulbs. If the desire is to have large and handsome flowers, the bulbs should be taken up periodically when the leaves decay, and all the small offsets detached from the principal bulbs, reserving only the largest roots to plant again in their proper places. Some *Lilies* are the better of being taken up and replanted every year; and I know of none that can benefit by being kept in the ground more than two or three years. I know that this is not the opinion of many; but those who will take the trouble to study the real nature of the bulb will appreciate what I say. The bulbs may be taken up at the proper season and replanted with fresh soil without the slightest check; but the valuable kinds should be handled with care, and none should be kept out of the ground a moment longer than is absolutely necessary; for everything that tends to dry up the scales, as in the case of dried-up imported bulbs, tends to diminish the nourishment that Nature has provided for succeeding bulbs. It is well to remember that *Lilies* of the European class thrive on more homely fare than those of warmer climates. Some thrive on very dry food, while others require much moisture.—DUNEDIN.

PINE APPLE STEMS SHRIVELLING.

THE remarks recently made in these pages on *Pine Apples* I have read with much interest. Neither of your correspondents has made any allusion to shrivelled stems. Most cultivators have seen more or less of them, especially in the winter fruiter; therefore, with a view of eliciting the opinion of the readers of the *Journal*, I have called attention to the matter. We have cut during the last three months from twenty to thirty fruits of different sorts—*Smooth Cayenne*, *Charlotte Rothschild*, *Prince Albert*, and a few *Queens*, which threw up fruit late in the autumn. What seems most perplexing is that some of each sort should shrivel at the base of the fruit just before commencing to colour, while others growing in the same

house side by side, treated the same as to soil, water, temperature, &c., remained plump and firm till fully ripe. In turning the old stools out of the pots they are about equal as to roots. They have been since showing their fruit in a light house at a distance of about 2 feet from the glass, plunged in a tan bed, bottom heat 85°, top heat 65° to 70°, the path sprinkled once or twice a-day according to the state of the weather. Should any of your correspondents have experienced the same difficulty, and will give through the pages of the Journal the benefit of their experience, the undersigned will be grateful.—INQUIRE.

HORTICULTURAL AND COTTAGE GARDEN SOCIETIES.

"D., Deal," writes almost despairingly. "I think it becomes a question whether flower shows are increasing in favour." The position of the Horticultural extremely critical; the Crystal Palace shows don't pay; Alexandra Palace defunct. What a climax of horrors!

In corroboration, I see the County Horticultural Society nearest me struggling against difficulties which will defy the strength of Hercules to overcome should they have one or two more rainy show days; I see others which the onslaught of a single "WYLD SAVAGE," if he were so inclined, would suffice to topple over, and which a single good downpour on their show day would certainly cause to melt into sily nothing. Such is the moribund condition of "horticulturals." At the same time I see numerous cottage garden societies cropping up around like so many Mushrooms, and most of them too, I fear, doomed to the same ephemeral existence.

Now there must be a reason for this which I think it is not hard to discover. The mischief is done by the frequency of those monster *al fresco* entertainments (not flower shows) which necessitate a great outlay, the only chance of recovering which is by attracting gate money. Yes, gate money has a good deal to answer for. It has ruined legitimate horse-racing and honest pedestrianism; it is in a fair way to ruin flower shows.

A horticultural society is in a poor way whose existence depends upon next show's gate-money; and that is the case with most. For the people who attend flower shows, because they love flowers and wish to encourage improvements in horticulture, are the few; the many who perhaps do not know the difference between a *Rosa* and *Chrysanthemum*, certainly not between a *Begonia* and a *Cactus*, go there because it is "the thing;" and their first question is about the band—Coldstreams, Black Watch, or Marines? and the flowers are voted a bore because of the awful crush, and the tent where fees are sold is abundantly patronised, and parasols are furled or unfurled on the approach of friend or foe, and the usual round of fashionable small talk and byplay is gone through, and at four o'clock the shilling folks! and then exit Sir Eugenius Broadacre and all his tribe. So the grounds are surrendered to the shillings, many of whom would give their ears to know how to grow just half a dozen *Roses* in that pecky bit of a back garden; and then at six in rush the expennies, most of whom do really love flowers. But it is getting dusk, and the best of them are being removed, and many of the cut blooms are faded, still the great unwashed enjoys himself after his kind, and lastly "darkness sheds her mantle o'er the scene;" and if the show takes place at Oxford or Cambridge, the porter rings his bell, he walks his round, the mob flees before him; he locks the gates (curtain fall). But this is the fair side of the picture. The day has been fine; gate-money by batfals. Hurrah for the society! lots of money for the prizes next year! and everybody so pleased.

Is there not, however, another side? Yes, a wet day—all those tents are hired, that band came from London (or Plymouth), and does not play for nothing; those flags are borrowed for a "consideration" those gardeners and under-gardeners love wages, those gate-keepers are not above taking fees, those helps enjoy bread and cheese with beer, the Committee cannot stop on the grounds all day without something to stay their stomachs, nay, even those reporters are equal to taking a snack, and the bell-ringers (I had almost forgotten them) are a thirsty lot, and have an itching palm besides, and—and—and, in fact there is no end of petty expenses; and nobody came but judges and exhibitors, and just a few—a very few, persons who love flowers; and we shall be out of pocket this year, but better luck next time. And the end is that the subscribers, who are chiefly those that do love flowers, get

tired of giving their money year after year to pay for something that they do not love, and droop, and droop, dwindle, dwindle society—subscription to pay deficit among committee, and 'tis no more seen, and all for lack of gate money! A year or two hence a plucky secretary will get together another committee, and another society will be set on foot, and if the same rotten staff be relied on, the same course pursued, result will be another failure.

Now, let it not be supposed that I object to *al fresco* fetes in themselves, or occasional gala days, or to those terrace-recreant amusements which in many instances follow the departure of the upper ten thousand, or even to that moderate indulgence which helps the licensed victualler to feed and clothe himself and family. I do not. But I do object to that enormous annual expenditure, which the certainty of large receipts at the gate alone can justify, and to which the money paid away in prizes and in legitimate expenses bears but a small proportion.

If what I have written be a true picture of the state of things in some of our county horticultural societies, it is a *fortiori* true of cottage garden societies, which, in their humble fashion, seem somewhat inclined to ape their betters, and the result will be the same.

What, then, is the remedy? In what follows I shall confine myself entirely to cottage garden societies, and to what I think would be best for them.

First, Let them take for their motto "Union is strength." Secondly, Let them keep steadfastly in view the real objects of the society. Thirdly, I would say to them, Multiply your local shows for garden produce, minimise your expenditure on fetes.

1, "Union is strength." An instance in point: The annual musical festival of the three choirs (Gloucester, Worcester, Hereford) is a well-known fact. Each festival is perfectly independent of the others—a healthy rivalry exists between them. Each conducts and pays for its own particular festival for the same object. This festival has lasted (I write subject to correction) above a hundred years, and at all appearances is likely to last another hundred. Let three cottage garden societies, established in three different country towns, combine in a similar manner, and I believe that similar results would ensue.

2, "Keep steadfastly in view the object of the society." This I take to be the improvement of gardening by promoting a healthy competition among cottagers. One instance: In my own neighbourhood the poor have been in the habit of cultivating one particular main crop of Potatoes from time immemorial. This Potato is extremely liable to disease, being a very late sort, and change of seed being in many instances impracticable, the kind seems to be wearing out. It is neither so large nor so good as it used to be. What, then, should the society do under the circumstances? Why, clearly try to introduce some better varieties. There are plenty which may with truth be called poor man's Potatoes, notably Paterson's Victoria, Red-skin Flourball, Brownell's Beauty, Snowflake, &c.; at any rate, they suit our soil. They may be put in fairly early, and dug early, and so escape disease. I take it, then, to be the first duty of the society to sell to the cottagers at a very low rate seed of some such Potatoes as I have mentioned, to distribute printed instructions for preparation of seed and cultivation, and lastly to give prizes at their local shows for the best produce. The result would be, that in two or three years the above-mentioned first-class Potatoes would be universally grown by cottagers; and should any new variety, such as Sutton's Magnum Bonum, prove itself to be equally useful, it should be the duty of the society to see carefully to its introduction. In this way the funds of the society would be most usefully employed; and whereas the poor man—who now gives, say 9d. a stone for his seed—cannot be expected to give 8s. for Red-skin Flourball, the society—by taking a quantity at the beginning of the season, and by distributing its printed instructions—might sell at a low price, and ensure the proper cultivation of what would be in the future an inestimable boon to the poor man.

3, "Multiply your local shows for garden produce. Minimise your expenditure upon fetes." Annual fetes are so expensive that few societies can afford to have more than one show a year. This one show does not give sufficient opportunity for exhibiting the earlier and the later kinds of garden produce. A middle time is usually chosen, and the consequence is that many important classes for which prizes are offered go unfilled or very inadequately represented. I would have, then, in each society two inexpensive shows at least in each year. One I

would call the Currant and Gooseberry Show, which should take in the earlier Potatoes, Roses, and the fruits most grown by cottagers; the other I would call the Apple and Pear Show, to be held at the end of September or beginning of October, by which time all the second early and late Potatoes should have been dug and stored.

An inexpensive show could not be held *al fresco*, but it should be held in a covered market or large public room. It would be visited by all the real gardeners of the neighbourhood, and the receipts at the doors (for gate money is a necessary evil) should go to cover the expense of the visit which our cottagers would pay to our neighbours' triennial gala; for I propose that each of the three societies whose union I contemplate should hold once in three years a horticultural fête, when the gentlemen in the neighbourhood would turn out the contents of their conservatories, and when bands, and flags, and dancing, and other attractions might be hung out to their heart's content. And in order that our cottagers may not think that they are the only people who can grow Potatoes, and that they may gain wisdom by the sight of what their neighbours can do, and that they may have a real good outing (which to them means a day's pleasure), part of the funds of the society should be each year set apart to pay the travelling expenses only of all cottage exhibitors who have taken prizes or whose produce has not been condemned by the judges as inferior and unfit for exhibition. I should expect that under this arrangement a very large number of the members of the united societies and their friends would be induced by fellow feeling or curiosity, or perhaps even by cheap railway fares, to support the triennial fête held by their neighbours from year to year.

Thus, I imagine, might be established what I began with—union, competition, economy, and perhaps permanence.—
SEXES CORCUES.

MAIDEN-HAIR FERNS IN WATER.—It is often a matter of annoyance in arranging cut flowers in glasses that the Maiden-hair Ferns do not last well. I find that the fronds stand well if a greater or less quantity of the pinns are submerged in the water. Doubtless the slender rachis in this family of Ferns does not supply a sufficiency of moisture to the pinns, but when some of these are also placed so as to absorb water, the lasting qualities of the fronds in a cut state are much enhanced. The plants used for cutting from are wintered in a temperature ranging generally from 45° to 50°, the plants being kept pretty dry all through the autumn and winter.—R. P. BROTHSTON (in *The Gardener*).

THE ROYAL HORTICULTURAL SOCIETY.

TO THE EDITOR OF THE TIMES.

SIR,—I fear that the letter from the Secretary of the Royal Horticultural Society in your paper of Friday will cause some disappointment to horticulturists, especially in the country. Having been lately in communication with very many of them, I believe it to be their feeling that horticulture is the most popular of all sciences in this country, and that horticulturists are perfectly able and willing to support a society for its promotion. A very short time back the leading London horticulturists were anxious to free the Society from the incubus of both South Kensington Garden and of the Commission of 1851, and to let it stand on its own bottom. Now, it seems we are to go back to the old story, "to make the gardens attractive to the residents in their neighbourhood and of London generally," and "the residents and owners of property in the neighbourhood" are again to be the backbone of the Society. London is a large place; there is plenty of room for two societies; might it not be well to organise a national society for the promotion of horticulture, the funds of which would be applied to strictly horticultural purposes? Dr. Hogg's letter speaks of a tenancy of the gardens up to 1892. The old saying, "Where there is a wrong there is a remedy," may not always be correct; but it does seem a wrong that land variously estimated in value at from £300,000 to half a million, bought mainly with the shillings of visitors to the 1851 Exhibition, should be exclusively used as a square for the neighbourhood and for our Committee meetings and shows, for which, though it is the most convenient situation, this convenience could not by any process of valuation be stretched to £500 a year.

There are many horticulturists through the country now collecting names of those who desire to become Fellows of the Society or of a society free from encumbrance, paying subscriptions a guinea annually. Will you allow me to beg them to confine their exertions? I cannot and will not work except as an amateur, and shall be most glad to be freed from even this

work; but let us only collect a sufficient number of good would-be Fellows, and all the rest will follow. There must be plenty of competent and energetic men, who, partly for the love of horticulture and partly for occupation and a post, would undertake to collect and cement together the material which is so abundantly scattered through the country. I do not speak without hook, being about to print in a report to the Committee for collecting guineas Fellows a long list of names, including the best-known horticulturists in all parts of England, Scotland, Wales, and Ireland, who are most anxious to have a really representative society to promote their well-loved art.

Your obedient servant, GEORGE F. WILSON.
Heatherbank, Weybridge Heath.

TO THE EDITOR OF THE TIMES.

SIR,—I regret that Mr. G. F. Wilson should have written his letter to *The Times* of the 23rd inst. without consulting his friends on the Council of the Royal Horticultural Society, among whom there are some who share his views as to the taking steps to sever the connection of the Society with the South Kensington Gardens. However desirous the Council or the Society might be of such a severance, the fact is that it is simply impossible without the consent of the debenture holders, and this consent they have refused. Is Mr. Wilson, then, prepared to run the risk of attempting to establish a rival society? The chances of his failing to do so are many, and he may injure more or less the Royal Horticultural Society and the advancement of the art which he really wishes to forward.

It is not generally known that the Society does something more than make flower shows and supply a recreation ground to South Kensington. The Scientific, the Fruit, and the Floral Committees meet every fortnight. The first is composed of some of the most eminent men in various branches of science, and the other two of leading scientific and practical horticulturists, and that they are efficiently doing work that is highly valued at home and abroad is evident from the published reports of their proceedings. The important experiments in practical horticulture that are conducted at Chiswick are, as Mr. Wilson knows, well done. What prospect, then, has that a rival society without the appliances that the Royal Horticultural has would do the work as well or better? He must be prepared with an annual income of at least £5000, besides the capital expenditure; and I ask if Mr. Wilson is prepared to find that sum. If not, it would be much better to support the existing Society.

Mr. Wilson's ideas as to the more extended support of the Society which would ensue if the subscription were one guinea have already been considered by the Council, and, subject to the decision of the annual meeting on the 13th of next month, adopted in substance; the only points of difference being as to the title of the subscriber, fellow, or member, the right of voting, and whether or not the privilege should be confined to those residing beyond a certain distance from London.

As to the value of the gardens at South Kensington, it is only fair to the Society to bear in mind that it has expended on them the sum of £73,000, and that it is principally owing to them that the land in their neighbourhood now realises the high prices which it brings. The value of the gardens is estimated at that of building land, but this is to forget the fact that to build over them would destroy the value which they as gardens create, and seriously depreciate the value of all property near them. What, for instance, would be the effect on the value of house property in Bolgrave Square if the square itself were to be built over?

The dealings of Her Majesty's Commissioners with the Society I have no right to enter upon further than to say that if questioned by proper authority I believe they will be found to have been justifiable in every respect.

I am, Sir, your obedient servant, ROBERT HOGG.
Royal Horticultural Society, South Kensington, Jan. 25th.

The following commentary on Mr. Wilson's letter is from the "Gardener's Magazine":—

"MR. WILSON has published in the *Times* and other papers a letter, in which he proposes the formation of a national society. The letter is ill-timed, and its publication so extremely injudicious that we cannot trust ourselves to say all we feel. In the first place, it suggests to the world at large that there is another split amongst the horticulturists when there is indeed no such thing; and, in truth, there has been no split at any time, however to the general public it may have appeared so. To make it appear that the house is divided against itself is bad enough; but, as Mr. Wilson has been figuring lately as a horticulturist with a bran new scheme of federation in his pocket, we should have preferred to see him show some steadfastness of character, and not display, as he has done, the shiftness of character that fits a man for leadership. Mr. Wilson professes to have formed a Committee. He has never called the Committee together, and his rash letter was written without the cognisance

of the Committee, and it demonstrates the fact that he is himself the alpha and omega of the guinea movement. To make such a proposal now is not only imprudent as suggesting the desirability of another failure—it is a breach of faith. He professes to have in his hand the promises of six thousand persons to join the Royal Horticultural Society as soon as the guinea subscription is adopted. The Council profess to be favourable to his proposals, and suggest a modification. Instead of waiting for the meeting, and then urging his case with such aid as he may be sure of if the six thousand is a fact, he plays turncoat, and "goes over" to an imaginary thing that has already been talked of so much that sober men are sick of it. He has been striving to work us all up to fever heat, and has had all the assistance he asked for from the press; and now in the columns of the leading daily paper he tamely pours cold water on his own work, and if the hissing that results disquiets him he has but his own unsteadfastness to thank for it. He was bound by all the laws as well as the courtesies of public life to discuss the matter first in the Council room at South Kensington, and in the event of failing to obtain all he demanded he could have carried his six thousand with him to the end of the world—that is, of course, provided they were willing to go with him."

EVERLASTINGS.

In making a selection of seeds these useful flowers must not be overlooked. They are effective when growing, and their flowers are valuable when dried for winter bouquets. The following are deserving of cultivation:—

Helichrysum.—Decided colours are the most desirable, such as are afforded by *H. monstrosum flore-pleno*—varieties album, roseum, atrococcineum, purpureum, and luteum; or a collection may be obtained which will include those and other shades of colour. Hardy annuals. Sow during early April in light rich soil in an open situation, the rows being 18 inches apart, thinning the plants so that they ultimately remain 1 foot asunder in the rows. The flowers upon plants treated as hardy annuals are not produced in quantity until late summer with me; but 1 sm in a high cold situation, in which the plants should be treated as half-hardy annuals, sowing in March in a gentle hotbed, pricking off the seedlings, when they have a pair of rough leaves, 2 inches apart in pans or boxes, returning them to the hotbed until established, then be transferred to a cold frame, hardening well off before planting-out in May. The plants will repay potting-off singly in small pots, from which they may be transferred to the open ground without the check consequent upon planting from pans or boxes. I have sown the seeds in rows 6 inches apart in a cold frame, keeping close until the seedlings appear, and then admitting air freely, having them well hardened-off by the second or third week in May, and then planting-out. In that way they answer well, but the autumn being wet the flowers are not nearly so good for drying as those produced earlier. 2½ to 3 feet.

Xeranthemum annuum flore-pleno, purple, and its white variety album, are very showy and desirable for drying, requiring the treatment of *Helichrysum*.

Acroclitium roseum, and variety album, are half-hardy, requiring to be sown in a hotbed during March, pricking-off the plants when large enough to handle, and growing them in gentle heat until established, hardening well off, and then planting-out in rich light soil in an open yet sheltered situation. The rows should be 1 foot apart, and the plants in them 6 to 9 inches asunder. 1 foot.

Annubium alatum is a very pretty small white flower, requiring the treatment of *Acroclitium*, but with an increased distance of 3 inches between the rows and plants. 2 feet.

Rhodanthe maculata (rose, yellow centre), and its varieties atrosanguinea (crimson); alba, the loveliest, having a fine silvery appearance; and *R. Manglesi* (silver and rose, with yellow centre), are really charming for greenhouse decoration; I grow three plants in a 5-inch pot, or five plants in a 6-inch pot, affording a light airy situation, watering liberally. For outdoor flowering sow during March in a hotbed, pricking-off the seedlings when large enough, growing on, and hardening well off before planting-out at the end of May, 9 inches apart in rows 1 foot asunder. 15 to 18 inches. Rich light soil.

Helipterium corymbiflorum, white, and *H. Sanfordi*, pale yellow, half-hardy, requiring the treatment of *Acroclitium*. 9 inches.

Waltia corymbosa, reddish, with yellow disc; *W. grandiflora* is perhaps the finest of all yellow Everlastings. Be careful not to overwater. The treatment recommended for *Rhodanthe* is suitable. 15 to 18 inches.

Gomphrena globosa, *vers. alba*, *aurantiaca*, *cernea*, *purpurea*, and *striata*, are tender or greenhouse annuals; their globular heads being cut when full-sized and dried are very useful, the plants also when growing being very effective. Sow during March or early April in a hotbed, pot the plants singly or three in a pot, and grow them in gentle heat, shifting into larger pots as required, giving single plants 6 or 7-inch pots, and trebles 8 or 9-inch pots. Rich turfy and gritty loam will grow them well. Place the plants in the greenhouse in June, affording a light airy situation. 18 inches to 2 feet.

Statice Donduelli, pale yellow or sulphur, and *S. Thounii*, blue and white, are very pretty. Sow early in March in a hotbed, pot-off singly in small pots, growing on in gentle heat, removing to a cold frame in May, and planting out in an open situation in rich light soil at the end of that month or early in June; or the plants may be shifted into 5 or 6-inch pots, and given a light airy position in the greenhouse, where they will flower to a late period. They are half-hardy perennials, but are best treated as annuals. Plant outdoors 9 inches apart in rows a foot asunder. *S. sinuata* (blue) and *S. spicata* are both half-hardy and useful; the latter, rosy pink, is fine for rock-work. The flower spikes should be cut when a majority of the flowers are expanded.

All Everlastings for drying should have the flowers cut, unless otherwise stated, before they are fully expanded, cutting with a few inches of stalk, and be tied in little bundles for convenience of suspending in any dry place, or they may be placed thinly on shelves in any dry airy house, as that of a vinery from which the Grapes have been cut. The flowers must not only be dry after they are cut, but be perfectly so when cut; for if cut wet, or if they become damp afterwards, they will certainly decay.—G. ABBEY.

OUR BORDER FLOWERS—FLEAWORTS.

This is a rather numerous family of border plants. With this genus as with many others, some species are cared for and sought after, some are neglected or cast to one side. We do not entertain the idea of cultivating all the plants enumerated in closely packed columns, for to do that we should require a farm of no small dimensions; yet many border plants are so charming that we are constantly adding to our numbers. Some of the race in hand ought to occupy prominent places in borders and on rockeries. According to English botany we have a representative in this family, but I think its name admits of a doubt—*Erigeron canadensis* sounds to me rather un-English, yet it is worth retaining.

The Fleaworts are a large and widely distributed family, inhabiting many parts of the globe, and soon make themselves at home with us in our borders. They are not particular as to soil or situation, but must have light and air. Some of them are tall-habited plants, while others are of small stature. *Erigeron glaucus* is of compact dwarf habit, and is an acquisition to any rockery or border; its pretty blue with yellow-centred flowers have a pleasing effect. Some of the species are said to be possessed of properties which drive away gnats and fleas. *Erigeron acris* is said to belong to our own flora; *Erigeron alpinus* and *E. uniflorus* both hail from Scotland, and are well adapted to the rockery and the border. They in a great degree resemble *Aster alpinum*, with which they are sometimes confused. *E. Villarsii*, *E. grandiflorus*, *E. purpureus*, and *E. serotinus*, are the kinds most met with in cultivation. There are many others of the family that are worthy the cultivator's notice. They will bear a good share of rough usage, and are easily increased by division in spring or autumn.—VERITAS.

GYMNOGRAMMA PERUVIANA ARGYROPHYLLA.

THE Gold and Silver Ferns are considered by many to be entitled to be placed in the front rank of their race, and amongst the many species and varieties now in cultivation there is perhaps none more generally admired than the plant under notice, *Gymnogramma peruviana argyrophylla*. The broad gracefully arching fronds, covered densely below and above with a powder of snowy whiteness, attract the attention of the most ordinary observer; nevertheless this Fern, though of easy culture, is in many cases devoid of that luxuriance and silvery whiteness which characterise a really flourishing plant.

The treatment under which I have found it to succeed best is very simple. Supposing we commence with a young plant in a 3-inch pot in March, it will then in all probability require

a shift into a 7-inch pot, using a compost of two parts of fibrous peat, one part of sphagnum rubbed through a sieve; the other part to consist of friable loam, coarse silver or river sand, charcoal broken small, and a little well-decomposed dried cow manure. Mix the whole well together, and in potting be sure and drain efficiently, and keep the crown well above the soil, and stagnation of water in the heart of the plant will thereby be avoided and finer fronds will be produced. Using such a porous compost renders liberal supplies of water absolutely necessary, applying it close to the edge of the pot, so as to prevent the farina being washed off the young fronds just emerging.

The plant must be placed in a position where it is not likely to suffer from condensed moisture dripping from the roof of the house, and it must not be syringed. It luxuriates in strong moist heat and a light position. It will bear more direct sun than most Ferns, moderate sunshine enhancing the richness of its silvery fronds. In June the plant should be moved into a 10-inch pot, using the same compost as described above, well warming it previously, and, if a suitable temperature is afforded, a plant 4 to 5 feet across will be the result.

It is during the winter months, however, that the plants show a tendency to look woody, and many are annually lost because a sufficiently high temperature cannot be maintained. Less than 55° nearly always results in the loss of the plant. If a low temperature is the only alternative, keep the plant in the driest and warmest part of the house, giving only sufficient water to keep the fronds from shrivelling. In a warm stove the plant is thoroughly at home, and requires moderate supplies of water throughout the winter.

A porous soil, plenty of water during growth, a moist tropical temperature, and warm winter quarters are the chief requirements of this beautiful Fern.—A. W., *Lincoln*.

LONICERA FRAGRANTISSIMA.

A HONEYSUCKLE in full bloom in midwinter is not a common sight, yet a fine plant some 10 or 12 feet high of *Lonicera fragrantissima* is now full of flowers, which are most valuable for cutting, the delicious perfume being quite equal in its delicacy and sweetness to that of the Lily of the Valley.

This Chinese Honeysuckle proves to be a very valuable evergreen shrub, the short-jointed sturdy growth being clothed throughout the year with deep green foliage, handsome in form and of great substance. Although the mild weather has caused its flowers to appear a few weeks sooner than usual, yet it may justly be termed the winter-blooming Honeysuckle, as it generally comes into flower in February when planted in a sheltered situation. So highly do I esteem it that I intend planting several of it in different situations, so as to prolong the season of its flowering as long as possible.—E. L., *Sussex*.

BUSH ALLAMANDAS.

EVERYONE who has seen these magnificent free-flowering plants growing in the stoves of Wimbledon House, and alluded to by Mr. Ollerhead on page 6 of the present volume, must have been struck with their great beauty; but it is not all who can afford such an expanse of roofing to allow Allamandas to display their natural beauty, and such persons must be content with growing a few plants in pots, which, as Mr. Ollerhead hints, often find their way to our public exhibitions. No stove plant is more worthy of a place there, for its large yellow trumpet-shaped flowers are very striking; but the plants are so often seen trained so closely to a balloon trellis that they present a stiff and formal appearance. The mode of training I adopt is a bush-like form, and plants so trained present a very satisfactory appearance, showing the flowers off to great advantage.

The present is the time to commence training operations. My usual mode at the commencement of the new year, and after the plants have become dry and well ripened, is to cut away all green shoots, and prune well into the ripe wood. Should the plants require repotting, which is usually the case, I place the ball in tepid water to ensure its being thoroughly moistened, and after it has drained, a portion of the old soil is removed, and the plant is repotted, using good fibrous loam with an admixture of sand. I then tie each shoot down as close to the rim of the pot as possible. When all are brought down they bear a close resemblance to a bundle of dead sticks; but this low training induces the shoots to break well back. When all is finished I place the plants as near the glass as possible,

and the young growths are both shorter-jointed and stouter than when placed a greater distance from the glass. The after-training does not entail much, if any, more labour than the ordinary method of tying to a trellis. As the growths extend some sticks are placed in the pot at proper intervals, and to these the growing shoots are secured, and a bush-like form is attained precisely in the same way as with Heaths or other hardwooded plants.

A plant thus trained of *Allamanda Hendersonii* was last season over 4 feet in diameter, and loaded with its large yellow flowers from June till October. It would have bloomed much longer only that I ripened it off to commence training early for another season. The *Allamanda* requires plenty of water, and delights in occasional doses of manure water while growing.—J. W. MOORMAN.

[The plant referred to was exhibited at Wimbledon, and the mode of training was generally admired.—Eds.]

THE APPLE ELECTION.

I SHOULD like to make a suggestion as to the arrangement of names, &c. In reading over a list of Apples in the English edition of M. de Breuille's "Fruit Trees," I found an arrangement there which I think with a little alteration would be the very thing required. *Summer Apples*—Dessert, Kitchen. *Autumn Apples*—Dessert, Kitchen. *Winter Apples*—Dessert, Kitchen.

In M. de Breuille's list there are less than six Apples named for the summer, and a great many more for the winter, but I propose to confine the number to six in all classes, to be mentioned in the order of ripening.—AMATEUR, *Gloucester*.

[Many correspondents have urged an election of Apple trees. We cannot undertake to arrange returns from the fruit-growers of our islands, but if anyone will undertake the task we will aid him in every way within our power. Will our correspondent oblige us by a list of the fruits he has elected for Gloucestershire?—Eds.]

ROSE-GROWING IN YORKSHIRE.

A YORKSHIREMAN is always jealous for the honour of his native county, not less so a Yorkshire woman. I quite believe that the brother of "WILD SAVAGE" will not find his Roses flourish under the "depressing circumstances" mentioned in your number of 25th January; but allow me to say that all Yorkshire is not so unfortunate, as it comprises many soils and many climates.

Here, near Hull, one mile from the east coast, our inland friends pity us for what they unwittingly designate our "fearful climate." While I walk round my garden in the midst of my Roses, in bloom early and late, and whilst admiring my favourites I can afford to laugh at my friends, for who amongst them, down to rosy Hertfordshire, can show finer blooms than I? whilst I enjoy them none the less because they are most of them raised and nursed by my own hands.

I do not feel at all inclined to tell "WILD SAVAGE" that he knows nothing whatever on the subject of Roses, but I do maintain, from my own experience, that Teas and Noisettes should be as little moved as possible in this district. The soil is clay and not a very kindly one, the winters very mild, the springs very cold and dry with frosty nights and hot sunny days. These are what we have to guard against, and Teas as well as other kinds of Roses so often die if planted in the spring, and are checked if moved in the winter, that I avoid the risk as far as possible. The only protection I ever give is a little shading with a few branches of furze to a few of the more delicate varieties, and I think of this the less the better. My garden is not large, I think I should not love it so well if it was; but I can safely say that the winters have never killed me either a Tea or Noisette Rose. The only Roses I ever lost from frost were one or two of the old Bourbon Charles Duval in the winter of 1860-61.

I quite agree with "WILD SAVAGE" in thinking that Tea Roses do not do well under a wall nor yet on it; indeed, so sure was I that nailing to a hot wall did not suit them, that I had mine unsafened and staked some years ago, since which they have done much better, and it was very satisfactory to me to find my own views corroborated afterwards in the pages of this Journal. There is no place where they thrive as they do in an open though sheltered border. I have all my Roses manured with a Jewish hand as early in winter as I can tolerate

to deface my borders; the manure is dug-in in the spring, and if the summer is dry an occasional thorough watering is given and thankfully received.

If my small experience is worth anything, let me strongly urge the desirability of growing all Roses, but more especially Teas, on their own roots. They will require well staking at first, but in a few years many of them will be strong enough to withstand the fiercest gales without injury, whilst their neighbours on unsightly standards will be knocked about or very likely lose their heads altogether, whilst as for the blooms there is no comparing them. I have only one excuse to offer for presuming to give an opinion in company with so many authorities on the inexhaustible subject of Roses, and that is—**Success.**

SOME SPECIES OF PRIMULA.—No. 4.

PRIMULA DECORA—COMELY AURICULA.

Its specific characters are thick smooth leaves, acutely serrated; calyxes clumpy, and pedicels longer than the scape. "This is nearly allied to *Primula villosa*, but we think it is specifically different. The serratures of the leaves are larger and much fewer, being usually about four on each side, and occupy the sides of the leaf only, leaving the apex pointed and entire; or, in other words, the terminal tooth is larger and more acute than the others.

"In the late Mr. Zier's 'Herbarium,' now in our possession, is a specimen of this plant from the Kew Gardens, where it was then called *decora*, which name we have adopted, being convinced that, although frequently taken for *glutinosus*, it is quite distinct from that species, which has nearly or altogether sessile flowers, and narrow, minutely-sawed, and clammy leaves.

"We are not acquainted with the country from which it came. It was communicated by N. S. Hodson, Esq., of the War Office.

"Flowers in April. Is as hardy as the common Auricula, and requires the same treatment."—(*Botanical Magazine*, t. 1922.)

ANTS AND TOADS.

"Go to the ant thou sluggard, consider her ways." I am not going to preach a homily, that is not my forte; but observing a few days ago some ants very busy on a young shoot of a Grape Vine, I was induced to watch their movements, and saw that they were collecting the small crystal globules which had exuded from the Vine shoot. It did not appear that they were feeding on them, but carrying them away most likely to feed their young. I observed one in particular, which was fearful of losing the precious morsel, reversed its position on the stem, so as to more securely hold it. In a short time all the almost infinitesimal globules had disappeared. I collected a few to ascertain if they had any taste, but they were as tasteless as homœopathic globules, but rather gummy, and did not dissolve on the tongue. From this and my previous experience I do not think ants injurious to the plants which they visit. They are seldom seen on plants unless there is food of some kind for them, aphid, scale, or mealy bug. After all

the globules had disappeared from one Vine the ants took up another, and so on through the entire length of the house.

While on the subject of gardeners' friends I may instance the sagacity of a toad which came under my notice. Some sixteen years ago, when living in Derbyshire, some of my assistants drew my attention to the actions of a toad in a pit which had been recently cleared of Melons. I saw that it was snapping up woodlice, and it poised its head as instinctively as a terrier dog at a rat's hole. I thought I would try its insect-devouring propensity on larger game, procured some fat well-fed cockroaches, and tossed them down before the gentleman in brown. After cunningly eyeing them for a second or two, "snap," and they were gone. Now, for sport, I thought I will see if toads are to be caught with bait. I then tied a piece of thread to one, threw it down near the devonour, and "snap" again. I then drew it 4 or 5 inches, when the toad finally ejected it. I then tried it without the string, but the toad was too wise to take that. I put down a fresh one; that was soon put out

of sight. If this does not show sagacity of a character higher than we give such things credit for I am mistaken. It may not be generally known amongst gardeners, but toads slough or shed their skins annually like snakes. My attention was drawn to the action of one in a cucumber house scraping alternately with its paws over the back of its head, similar to the action of a cat when cleaning itself. On close examination I saw that it was completing the removal of its old coat. From that time I have watched their varied actions with great interest, and keenly appreciating their services.

Many are the prejudices against this useful creature, one in particular I will mention. An old gentleman, whom I succeeded in a situation, was kindness itself, and would not "heedless tread upon a worm," was of opinion that toads snuck Strawberries, and if he found one inside the garden walls would carefully take it up and convey it to the outer world. No doubt many of the readers of this may have heard of similar prejudices; but if the habits of these minor



Fig. 10.—PRIMULA DECORA.

subjects of creation were more closely studied, many an instructive lesson would be learned.—J. GARD, *Thorndon Garden, Brentwood.*

THE PROPHET ELM AT CREDENHILL COURT, NEAR HEREFORD.

THE common English Elm—for height and size, for grandeur of form, and for majestic growth, combined with lightness and beauty—has few competitors. It gives to our parks and pleasure grounds grand avenues and noble groups of trees; it encircles our home landscapes, adorns our houses, and gives everywhere a shade in summer that adds greatly to our personal enjoyment, and make it perhaps, in its homely and domestic associations, the most general favourite of all our large trees.

Many superstitions are connected with the Elm, so that each of them may be considered to be a "Prophet." Thus Cardanus says, "The leaves of an Elm tree falling before their time do foreshew a murrain or death of cattle." There is a peculiarly-formed Elm in Hampton Court garden known as "King

Charles's Swing," of which it is safely said that whoever sits in it long enough is cured of the headache.

The Prophet Elm at Credenhill Court is worthy of note from its name. Whenever a death is about to take place in the

family of Eekley (the owners), it is said to be foretold by the breaking-down of a large bough, and the most convincing (?) instances are given of the correctness of these occurrences. The "Prophet" is a fine tree, and grows in the garden on the



FIG. 11.—PROPHET ELM AT CREDEHILL.

western side of the house. It presents a fine, tall, straight bole, which measures 16 feet 9 inches 3 feet from the ground, and the trunk rises some 40 feet before giving off any branch of importance. The "Prophet" is said to contain 400 cubic feet of timber, and its special peculiarity rests in its having two important remains of branches below the foliage, the first

being 27 feet from the ground. The "Prophet" is probably not much more than one hundred years old, as Elm trees, and indeed all other trees, grow faster at Credenhill than elsewhere in Herefordshire. The height is about 110 feet, and there is every reason to believe that the tree is very free from decay.

In reply to some queries the Rev. C. H. Bulmer, rector of Credenhill, has obliged me with the following answer:—

"The Prophet is undoubtedly in magnificent health, and bears his years—certainly over a century—extremely well. Indeed were it not for the occasional inroads into his constitution incurred in the faithful discharge of his prophetic office, without doubt he ought to last well through another century. The tree may be said to possess more of a family than local reputation. The superstition is as follows: When any branch of the old Elm falls, one of the members of the Eckley family is supposed to hear in the crash of the ponderous bough (and on account of the close contiguity of the tree to the mansion it is very easily heard) his own death knell. On two occasions I can bear personal evidence to the prophecy being singularly fulfilled.

"The Eckley family came into possession of the Credenhill estate, which was purchased from Henry Grey, eighth Earl of Kent, in a very curious manner; at least so says tradition. Edmund Eckley rode a race on relays of saddle horses to London against the owner of the Foxley estate, the ancestor of the late Sir Uvedale Price, the well-known musician, botanist, and landscape gardener, and arriving first bought the estate. It may carry some little interest with it if I mention that my predecessor in this living, and the former owner of the estate, the Rev. John Eckley, told me that this Sir Uvedale Price of Foxley (who was not only a near neighbour, but also a very intimate friend) himself superintended the pruning of the tree in its first stages of growth, which may partly account for its unusual altitude and dimensions, if hardly for its prophetic eccentricities. Sir Uvedale was also neighbour to and a very intimate friend of a still more distinguished man—Andrew Knight of Wormesley Grange."

There are many remarkable Elms in Herefordshire, though London, in his "Recorded Elms," only mentions three trees in the whole county. The most remarkable are the Rotherwas Elm, the Kingsacre Elm, the Stretton Rectory Elm, the Wormbridge Elm, the Holme Lacey Elm, the Much Marcle Elm, the Ridgemoor Elm, The Westhild Elm, the Castle Green Elm, and Cathedral Clove Elms, Hereford; the Hill Court Elms, and the Ross Churchyard Elms. At the latter place two young Elm trees have sprung up within the church, and have been allowed to remain there. They are suckers from the roots of the tree which grew on that side of the churchyard, cut down many years since. They are said, by the man who shows the church, to grow in the pew in which the "Man of Ross" was accustomed to sit, and thus do reverence to his memory.

DARLINGTON GARDENERS' INSTITUTE.

At the meeting held in the Institute on January 18th an interesting and able paper on British Ferns was read by Mr. Harrow.

After a few introductory observations Mr. Harrow proceeded:—The study of Ferns, even if confined to British Ferns, opens out an almost inexhaustible field of study and observation. It is well known that the coal beds of this country, and especially of this county, are composed in a very great measure of the various species which at some remote period flourished luxuriantly in this island. Sir C. Lyall, speaking of one of those gigantic Tree Ferns found in the coal beds near Newcastle, says that the trunk measured 5 feet in diameter, and must have been between 40 and 50 feet in height. From this example we may see how greatly the Fern has assisted to develop the commerce of this country, and how much we owe to it. Though we do not now possess the gigantic Ferns of New Zealand or the Tropics, it is probable we have as great a diversity of foliage and as many varieties in the British Isles as can be found in an area of similar extent in any part of the globe.

Ferns differ from flowering plants both in the mode of construction and growth. If we examine the base of a leafstalk of a tree we shall find a bud, which if undisturbed will produce a bunch or cluster of fruit next season. There are no such buds in the axils of Fern leaves, not even in those of the Drake, though the latter is peculiarly tree-like in growth. The upward growth of the Fern consists of a process of unrolling, expansion, and maturation of the leaves and stems. All the Cryptogamia are destitute of flowers; that is their most noticeable distinction, unless the fertile fronds of the *Osmunda regalis* be so termed. But although destitute of flowers they are far from being destitute of beauty. The graceful forms of the fronds and their delicate tracery, combined with loveliness of colour, make them objects of our admiration. The number of British species is said to be forty-six, but what a number of varieties they present in forms differing from their types or what we call types. These varieties number at least five hundred. Mr.

Sim of Foot's Cray in Kent enumerates in his catalogue 365 British species and varieties. The varieties of Hart's-tongues are about one hundred. Some are tasselled and fringed, others resemble stag horns, frills, fans, &c. There is scarcely a species of British Ferns that does not show some varieties crested or frilled; this I consider a substitute for flowers, and certainly the variations add much to their interest and beauty. Few can look upon *Lastrea Filix-mas cristata* or *Athyrium Filix-femina* well grown without admiring them. The leaves of other plants are varying in their outline to a great extent, but those of the Fern are as fantastical, changeful, and varying as the anthers borealis. No one can thoroughly enjoy or understand Ferns unless he has hunted for them in hedgerows, woods, and amongst rocks, rivulets, and waterfalls. I have found *Scolopendrium crispum* in the wood opposite Gainford, and some peculiar sports in the same place and also at Richmond. But the finest *Polystichum aculeatum*, Lady Fern, and *Lastreas* may be met with in the woods near Coxwold and Ampleforth. The *Polystichum* seems to be quite distinct from those growing in this part; the fronds are much finer, and the colour much brighter. It is interesting to notice the different varieties of the same species growing in different localities. For instance, the *Scolopendrium vulgare* found at Richmond is distinct from that which grows west of Barnard Castle; the former being quite undulated, while the latter is rigid and straight. *Blechnum spicatum* (*B. boreale*), abounds near Barnard Castle, but it is not found at Richmond. In the crevices of the old bridge at Richmond *Cystopteris fragilis* is found, and *Asplenium Trichomanes* in the Abbey Bridge near Rokeby. At the village of Borton, not a very likely locality, I have found *Polyodium vulgare*, *Asplenium Ruta-muraria*, and a *Trichomanes* growing on the old walls.

With regard to the cultivation of British Ferns, I think many cultivators err in their treatment of them during the winter months by allowing their crowns and roots to become dry as dust, alleging as their reason for so doing that moisture may stimulate them into growth at a time when they should be at rest. I differ from that opinion, and think that if kept in a temperature of 40°, moderately moist, so that the crowns and roots never become quite dry, with as much air as possible (except during frost), they will form good crowns and handsome plants, and be a source of pleasure and satisfaction to the cultivator. As to the deciduous kinds, not having had so much experience, I hesitate to offer a decided opinion as to their cultivation. I hope, however, the discussion of to-night will elicit some good hints on it. It does look something like ingratitude to turn out in the cold these plants which by their beauty have given us so much pleasure in summer. It is likely that, accustomed to the protection of glass, they may be slightly tendered, and may not make such good roots or crowns in the open air. Mine are kept in the house, and I shall be glad at the proper season to show them to any wishful to examine them. Mr. Harrow, in conclusion, said the great principle of Fern-growing was to imitate as closely as possible the conditions under which they are found in their natural situations.

DOING AS HE WOULD BE DONE BY.

We have great pleasure in publishing the following communication:—

The conduct of an old customer of ours—who succeeded his father, after many years of business together—has been so exceptionally large-minded, and so thoroughly, I conceive, such as an Englishman in business ought always to be, that I trust you will consider the account of the transaction worthy a place in your columns.

You are no doubt aware that of late years, through the wild competition in the seed trade, it has been the absurd custom for the firms to sell Peas, Beans, and all kinds of seeds, long before they can possibly know what the harvest will produce, at the most speculative and often ridiculously low prices in the summer and autumn, so that—as in this year of a generally deficient harvest—Peas, Beans, and seeds have been sold in the summer, and have to be delivered at prices considerably below what they have to be purchased at. Whether the seed-merchant loses by it or not, of course the goods must be delivered at the agreed price; while in an abundant year—if the seed, &c., has been purchased at more than the season value—the poor seed-merchant must reduce his price to that of the season. His bargain is but a poor one in either event. Legitimate trade is thus seriously damaged and degraded.

And now for the case of our old customer. He had bought of our traveller, very cheaply and fairly at an agreed price, certain Peas last autumn. The harvest has been deficient, and the Peas he bought are worth double what he agreed to give. In settling his quarterly account he thus writes, January 10th, 1877:—"As your imperfect knowledge of the value of the Peas

in the autumn caused you to put too low a price on them, I see no reason why I should derive an advantage from the circumstance, and therefore I request to be allowed to pay the worth of them. I have added £— to your account."

I think you will agree with me that this is a fine spirit rarely to be met with, and deserving of record; and I would add that if all our business were carried on upon such honourable, liberal, and high principles as those displayed by our old friend (who little thinks that we are writing about him), trade would be far more honest, agreeable, and profitable.—A SEED-MERCHANT.

A GOOD OLD ROSE.

A ROSE that is remarkable for the abundance and excellence of its flowers when flowering with and among others of the most select sorts; for its earliness and lateness, or rather its almost perpetual property of flowering; for its free, abundant, and wonderfully robust growth; for the large size and elegant form of its foliage; for its adaptability to every form of culture under which a Rose can thrive, and to every style of training, to every position or aspect, must perforce make its way into general favour. Such a Rose have I. Among standards none are in such rude health, have such rampant growth, are clothed with such handsome foliage—green and glossy even now in midwinter—or bear such huge clusters of large flowers all through summer and autumn. Among climbers none are more vigorous or cover a large area of wall space more quickly, continue in flower so long, or give fine flowers upon all aspects, north as well as south, as it does—once plant of it upon an open west wall even now in January having several large fully-expanded blossoms which would not disgrace a summer bouquet; moreover it is equally "at home" upon stocks of all kinds or its own roots. Who can tell me the name of my Rose, or of any variety which they have found equal to my description? We have had a Rose election which has done, and doubtless will continue to do, much good. Let us now see if we cannot find out a few kinds of superlative merit in every respect, and which are therefore as valuable for covering the sides of a house, for planting in the Rose garden, for forcing and general pot culture, as for furnishing cut flowers for that stand of any number with which we always win the first prize and cup! Have we half a dozen such? I trow not. I have only one. Who can me tell its name?—EDWARD LUCKHURST.

SPECIAL FLOWER SHOWS.

UNDER the above heading at page 61 of this volume of the Journal, Mr. Douglas quotes a passage from the Rev. J. B. M. Camm's remarks at the late Rose conference to strengthen his argument that other varieties of florists' flowers besides Roses have, and do still, support distinct shows. Alas! that such lovely, and I thought universally popular, flowers as Carnations and Picotees, &c., should need any special pleading. To the following sentence, which has a second time appeared so prominently before the public, I must be allowed to demur, as being contrary to facts:—"Country Rose shows generally betray failure in some form or other; Hereford, for instance, where the largest balance ever forthcoming was 4d." These words, which I well remember were spoken by Mr. Camm in that happy jocular vein his friends know so well, and with which our cloth, from honest old Latimer to Sydney Smith, have occasionally refreshed themselves and others; but by which strangers and others not quite so conversant with my clerical brother's hard-hitting punishing phraseology, may very easily be misled.

Amidst the wreck of falling Rose shows I turn with pleasure to the last two published reports of the West of England and Hereford Rose Show, which lie before me, and find that in the past two years the Treasurer's balance in his favour to be respectively £3 8s. 2d. and £14 10s. 6d., while last year's prize list (including cups) was nearly £190.—HEREFORDSHIRE INCOMET.

NOTES AND GLEANINGS.

IN the front garden attached to Mr. Barron's residence at Chiswick is growing a thrifty specimen of the EUCALYPTUS OBOLEPTUS. The plant has endured four winters. The extremities of the shoots have been killed during past winters, but on being pruned the main branches have grown again freely. The plant or tree has received no injury whatever

during the present winter, and is conspicuous from its large and distinctly-coloured foliage. We never saw a Blue Gum tree more hardy-looking and exuberant than this young specimen.

— THE BOURNEMOUTH WINTER GARDEN, which was recently opened, is an imposing glass structure, and was erected by Fletcher, Loundes, & Co., 13a, Great George Street, Westminster.

— WE are informed that the HEIGHT OF WELLINGTONIA at Cotlands, Sidmouth, is 42 feet, the circumference of its stem at its junction with the ground being 10 feet 4 inches, circumference of lowest branches 80 feet. The sizes of other trees which have been forwarded to us are as follows:—A tree at Kilton 44 feet high, circumference of stem 10 feet; at Poltimore a tree is 60 feet high; a tree in the cemetery at Bath is 40 feet, and one at Beaufort near Battle 40 to 50 feet.

— WE have received from Mr. Arthur Perkins, Park Nurseries, Coventry, cuttings from young VINES which were planted in May, 1875. The wood sent of Madresfield Court, Muecat of Alexandria, Lady Downe's Seedling, and Black Hamburg is exceedingly strong, also well matured, and affords conclusive evidence that Vines may be well grown in "unprepared borders." Excellent Grapes can hardly fail, being produced by canes of such superior quality. We should be glad, however, to know what Mr. Perkins means by "unprepared borders." What is the nature of the soil and sub-soil, and what stimulants have been afforded the Vines?

— AT the spring exhibition of the Royal Horticultural Society held last year at South Kensington FORCED PLANTS OF SOLOMON'S SEAL (*Polygonatum vulgare*), which had been grown at Chiswick, were much admired. This may be an opportune period for directing attention to this valuable old plant as being the time for potting the crowns for early flowering. The crowns at Chiswick we noticed the other day are just starting into growth. After being potted they are placed in a warm dark place until growth fairly commences, when they are removed to the light. It is very important as the growth advances that the plants be kept as near to the glass as possible, to keep them as sturdy as is consistent with their nature. When flowering, their delicate light green foliage and elegantly arched shoots laden with white flowers are highly effective. As arranged on stages the plants show to much greater advantage than when growing in the garden, where the flowers are necessarily much hidden by the foliage. The plant is worthy of being forced by all who possess crowns and have the means of forcing them.

—"I was agreeably surprised the other day," writes Mr. Luckhurst, "when looking over a bed of the LEAMINGTON BROCCOLI to find a goodly number of it fit for immediate use, and to see from the appearance of the remainder that a succession may be depended on from this one bed for some time to come. This early maturity is, of course, owing to the mild weather; and even in this exceptional state of things I am glad to find this excellent variety retains its peculiar property of coming in gradually, precisely as it does in ordinary seasons, when, as has already been told, I have cut from the same bed excellent heads in March, and continued doing so till June."

— WE are informed that the RICHMOND (Surrey) SHOW, which is announced to be held on June 28th, is expected to be on a larger scale than the last two successful exhibitions.

— AT all times the ORCHIDS at GUNNERSBURY are worthy of note and inspection. Even when the plants are not flowering they are attractive from their glossy cleanliness and exuberant health. At the present time the principal display is afforded by a row of forty plants of *Phalenopsis*, principally *P. Schilleriana* in variety. The plants are in baskets, and their effect, as may be imagined, is very striking. Other Orchids in flower are *Saccolabium Harrisonianum*, *Odontoglossum Bictoniense*, seven vigorous spikes; *O. Alexandrinum*, in superior varieties; *Laelia aneops Dawsoni*, so pure and yet so rich; *Cypripedium Hookeri*, fine alike from its flowers and marbled foliage; and still more beautiful in flower is *C. Parishii*. Orchids which are showing their spikes are *Odontoglossum Andersonianum*, which has perfected a wonderful growth, and will shortly have fifty-seven flowers open on one spike; *Cymbidium eburneum*, ten spikes; *Aurides Veitchii*, *Odontoglossum candatum*, &c. In this collection *Angreum seepipedale* produced seventeen flowers last year, and the beautiful *Odontoglossum vexillarium* upwards of forty flowers. Mr. Richards and his foreman have just season to be proud of

these Orchids. We never saw plants in more superb condition. The Tree Ferns at Gunnersbury are extraordinary specimens. Two of the "trees" were not less than 30 feet in height, with trunks 8 or 9 feet in circumference.

— Mr. ROGER LEIGH of Barham Court, in an address lately delivered, gave an interesting description of a system adopted in France whereby the children attending 30,000 primary schools in the rural districts receive instruction in the CULTURE OF THE SOIL. The child is shown the soil which best suits a certain plant to be cultivated; he is made to prepare it for planting, to sow it, to free it from weeds, to wage war against insects and grubs, and finally to record in his school books the advantages derived from the selection of special soils, the application of new manures and variations in the time of planting. These lessons are never forgotten, and the land allotment of the French peasant is made to produce a variety of vegetables fit for any man's table. The agricultural societies throughout France cordially second the Government in its efforts by bestowing on pupils and masters their counsel and assistance, and offering prizes for competition.

— We some time ago directed attention to the value of the common IRISH IVY for clothing the ground under trees on lawns where grass refuses to grow. How efficient Ivy is for the purpose named is forcibly exemplified in the pleasure grounds at Gunnersbury. In these beautiful gardens are several grand old Cedars (*Cedrus Libani*), and beneath them, as far as the branches extend, the ground is closely covered with Ivy, which is perfectly green and fresh under the dense shade, and adds considerably to the effect and finish of the grounds. These large circular beds of Ivy are quite ornamental and decidedly enhance the beauty of the old trees. The labour of patching the turf under trees on lawns many gardeners know to be considerable, but when once the Ivy is established only a very small amount of labour is required to keep it in order for years. The Ivy beds also add a special feature to the grounds in which they are adopted—in a word they are both effective and economical. The subject is highly worthy of being again alluded to and of being "kept in remembrance."

— AMONGST the appeals for aid owing to injury from the LATE FLOODS an application from the parishes of Billingham and Walcot near Sleaford, Lincolnshire, was read before the executive committee of the Lord Mayor's fund, stating that three thousand tons of Potatoes and Carrots and a thousand acres of Wheat had been destroyed. £345 had been raised locally and expended. The committee voted £100, with a promise of more if needed. 670 persons had sustained injury; the average depth of water in the houses was 6 feet.

— A PUBLIC GARDEN AND RECREATION GROUND for the parish of St. George's-in-the-East was opened on the 25th inst. The garden has been formed by the adaptation of a portion of the parish churchyard, under the authority of a faculty from the Bishop of London's Court, and by the purchase of a disused burial-ground adjoining the churchyard, the cost of the latter being £2700, towards which the Metropolitan Board of Works have contributed £1200. Sir James Hogg, the Chairman of the Metropolitan Board, accompanied by Mr. Ritchie, M.P., Mr. Samuda, M.P., the Lord Mayor, the Rev. Harry Jones the rector, the Public Garden Committee, and a number of the inhabitants, proceeded round the garden, and declared it to be dedicated to the public for ever.

— It is not generally known how valuable for forcing is the old hardy *SAXIFRAGA LIGULATA*. Mr. Wills has employed this plant effectively in the Westminster Aquarium, and we recently observed it flowering freely in one of the houses in the Chiswick Gardens. The plant is naturally a precocious bloomer, and at the present time is showing its flowers in the open borders. It is one of the large-foliaged Saxifrage, in this respect somewhat resembling *S. cordifolia* and *S. ovalifolia*, which flower considerably later. The flowers of *S. ligulata* are larger and altogether more attractive when they are assisted to expand in gentle heat under glass. The flowers are admirable for bouquets, and forced plants are ornamental for the conservatory during January and February.

— As an instance of additional labour caused by the LATE FLOODS may be noted the condition of the stockholes during the deluge and the cost of emptying them at the Royal Gardens, Kew. For some days and nights the cost of the manual labour in pumping out the water was, we are informed, £25 per twenty-four hours, or £175 per week. This was both

too costly and too slow for the Curator, Mr. Smith, who proposed the hiring of two of Merryweather's powerful fire engines. These were obtained at a cost of £30 per week each. These engines kept the water under, and the saving effected by their use was upwards of £100 per week. This is a striking proof of the value of steam and machinery over manual labour, as it is also evidence of the value of the services of a really competent and practical manager.

— ONE of the great ORCHARD HOUSES at SAWBRIDGEWORTH, 180 feet long, and which is filled with Peach and Nectarine trees in pots, is now a sight of great splendour. The trees are a mass of bloom, and furnish an instructive study to pomologists. This great establishment now extends over 110 acres entirely cropped with a fine stock of all kinds of fruit trees.

— A CORRESPONDENT writes to us as follows on SELECTIONS OF SEEDS—"Whilst thanking 'A KITCHEN GARDENER' and G. Abbey for their useful and excellent lists of seeds, may I suggest that they and many other contributors to the Journal would make their articles still more useful if they would make it a rule to give a short sketch of their soil, climate, and locality to prevent mistakes? Enjoying, as I do, a dry climate with mild winters but bitter springs and hot summers, I am often disappointed to find that seeds most highly recommended, but suited perhaps to a sandy soil or a rainy district, do not suit a lump of Yorkshire clay."

— "T. H." sends the following in reply to the request of "WYLD SAVAGE" on page 64:—"I remember some few years ago going to Cheddar for a day, and there I was offered some hardy Ferns by an old woman who gathered them to sell to visitors. Among them was *Adiantum Capillus-Veneris*. I should say it may still be found growing at Cheddar. There are also several varieties of hardy Ferns growing on Thapwick Heath, very probably it may also be found there."

— THE *Irish Farmers' Gazette* in alluding to Roberts' Gros GUILLAUME GRAPE, states that Mr. Roberts regards this as being quite a distinct variety from that in general cultivation, and besides producing mammoth bunches, being far more amenable to ordinary treatment. The Vine that produced the monster bunches (three of which weighed upwards of 45 lbs.) grow in no elaborate prepared compost, but in good loam, pure and simple.

— WRITING to us from Antwerp, Mr. Charles Van Geert states that the WINTER in BELGIUM has been unusually mild. They had only two nights of frost in December, and since the 26th of that month there has only been a little frost on the 22nd and 24th inst., the temperature since then being mild.

— It has been stated by Sir John Lubbock that certain kinds of APIDEEs are preserved by ants for purposes of the food afforded by a certain sweet secretion in the former, the eggs being carefully guarded and the young larvae fed and cherished until they ultimately attain their perfect form, when they served as contributions to the dietery of the ants. This singular fact was some time ago alluded to in our columns by our entomological correspondent "J. B. S. C."

— At a recent meeting of the Paris Academy of Sciences MM. Grandeu and Bontou stated as the results of chemical STUDIES ON MISTLETOE, that the composition of the stem differs essentially from that of the species of trees on which it grows. That the composition varies with the species. That Mistletoe contains much more potash and phosphoric acid than its supporting trees, and much less lime. It seems to live on the tree like a plant on the soil, and that it takes from the parts gorged with nutritive juices the incombustible matters necessary for its organisation.

— THE heavy rains may prove beneficial in a way not generally anticipated. An entomologist writes to us that "the approaching season will be notable, probably, on account of the SCARCITY OF BLIGHT or insect pests of all kinds." So far as he can judge, the destruction of insects by the heavy rains has been very great, all species suffering much more from damp than from cold during hibernation.

NOTES ON VILLA AND SUBURBAN GARDENING.

THE wet weather has hindered the progress of outdoor work, and all those who have the opportunity should make the most of every fine day. The crops which have come up are lacking the reverse of healthy, and will have to be coaxed into growth to produce satisfactory results. Owing to the inclement season

villa gardens are at present at a standstill; but as the weather changes to fine work in the garden must be prosecuted with all energy.

February is fast coming in, and in the kitchen garden Peas may be sown twice during the month, the first sowing being of early, and the next of second early sorts. The early wrinkled varieties are very superior in flavour, and may be used for the first and also for the second sowing; but it is well not to depend upon wrinkled Peas entirely for sowing at the early part of the season, as they are not so hardy in constitution as some of the commoner sorts. Make a good sowing of Early Longpod Beans to succeed the Early Masagan. The Savills Longpod is a Bean of exceptionally good quality, and ought to be grown by everyone. Sow in a frame a crop of Early Horn Carrot, and also sow Lettuce, Cabbage, and Cauliflower seed, and do not apply too much heat, but raise the plants in a moderate temperature, so that the various changes which they have to pass through may not interfere with their progress. Let the Cabbage beds be filled up where vacancies have occurred, and take the first chance to have the soil stirred among the plants. We have been in difficulties lately as to the working of the soil, and therefore much work will have to be done in a hurry, and many crops must necessarily be put in at a disadvantage.

Plant Potatoes in frames—the sets which were laid out last month to sprout, and take care that the next lot of sets to be planted are laid out carefully, so that they may not be injured in any way. I do not anticipate a very early season for outdoor Potatoes, as I think the soil is likely to be in a state adverse to their well-doing. I do not like to see the sets sprout too soon, for if in activity too long the tubers become partially exhausted, and a satisfactory crop cannot be expected from them.

Now is the time to plant the Jerusalem Artichoke in a soil that has been well turned up and a fair amount of manure incorporated with it. This is a very quick-growing plant, and therefore requires some stimulant in the soil to help it on; it then produces a profitable crop. The soil for Parsnips should also be prepared, for although this is a vegetable less thought of than some others, it is yet one of the most serviceable. If the seed is sown early it allows time for the roots to develop, and other crops more particular can be attended to as the time comes on. The Parsnip likes a deep and rather heavy soil; if given in a loose soil the roots are likely to be in a state adverse to their well-doing.

Prepare the soil for all other crops as the weather will allow, for time is advancing towards spring, when all must be busy.—
THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

We seized the opportunity of two days' fine weather with frost to mulch all the fruit-tree borders. The manure was wheeled on to the ground and spread evenly over the surface. It will not be dug-in for some weeks yet. Raspberry bushes also receive a good dressing of rich manure after all the old stems and superfluous canes are cut away. It is not well to allow too many canes to remain on each stool, as they are not likely to bear such good fruit if the branchlets on which it is formed are too close together; four good canes are a sufficient number to remain on each stool. When they are trained together to one stake under this form of culture the plants ought to be 4 feet apart. We have before stated, however, that the best crops were obtained when the stools were about 2 feet apart and the canes trained to a stout wire about 3 feet from the ground.

The planting of all hardy fruits, ought to be finished as soon as possible. For Raspberries the ground ought to be well trenched and manured. The same may be said of Currants, intended for all small fruits. After planting the surface of the soil over the roots should be mulched with manure; this is of the very greatest advantage to all newly-planted bushes and trees, as it prevents them from suffering from the variable effects of our climate. We would also reiterate the remarks about care in planting. A hole ought to be made sufficiently large to allow of all the roots and fibres being spread fully out, and to give the trees or bushes a good start some turfy loam ought to be placed around the roots; this should be worked in amongst the fibres with the hand, then the ordinary soil should be placed over it, and the whole be trodden in with the feet—not very firmly, though, if the ground is wet.

Strawberry plants are sometimes put out at this season, but when they are planted so late this season is lost. Many gardeners take off their runners late in the autumn, say in October, and plant thickly on a sheltered border. These are the plants that would be planted-out in the quarters now. The soil must be pressed firmly about the roots, and the surface of the ground should be made neat with a digging-fork. The distance between each plant ought to be 2 feet. We can do nothing to our own Strawberry beds, but when the ground is sufficiently dry the surface will be stirred with a hoe, but only the surface, for to force the hoe into the ground even 2 inches causes great

destruction to the numberless fibres with which it is matted. For the sake of neatness as well as the health of the plants, all dead and decaying leaves should be promptly removed.

PINE HOUSES.

Since the beds were turned the bottom heat has increased to its maximum, but as the pots were not plunged very deeply into the bed the plants will not suffer from root-burning. We are now keeping-up the heat in the fruiting-house to a minimum of 70°, the temperature by day owing to so much sunless weather seldom rises more than 5° higher than this. We are glad of an hour or two of sunshine, which on one or two occasions has raised the thermometer up to 85°. The watchful cultivator will be on the alert at such times and will close the lights early in the afternoon. Bottled sunshine is better for the health of the plants than bushels of coke. The ventilators should be opened as early as it is possible to do so in the mornings; the least chink at the highest part of the house is sufficient, and this will insure a change of air for the plants in an hour or so. Those who are accustomed to work in houses with a high temperature feel the advantage of early air-giving on their own comfort, and the atmosphere that is most suitable for the health of man is, comparatively speaking, the best for plants. Succession houses where the plants have not yet started into growth have a lower temperature by 10° or 15°. If possible the suckers potted in August will be repotted in a few weeks into the fruiting pots; the bed will be turned and renewed, and a higher temperature maintained to start the plants into growth.

CUCUMBER AND MELON HOUSES.

For Cucumbers the temperature is kept the same as the fruiting Pine house. We are obtaining very fine fruit and sufficient for our wants from a few plants of Tender and True and a new sort sent by Mr. Kelway of Langport; it did well last winter, and has grown and fruited side by side with our own stock this season. It is much in the same way as Tender and True and quite equal to it. The variety has since been named Lord Beaconsfield. Kelway's Conqueror is also a fine-bearing useful variety. The young plants raised from seeds sown the last week in December are making healthy growth on a shelf near the glass. The plants have been potted singly into 60-sized pots: in a few days they will again be repotted.

Melons intended for the earliest crop ought to be as far advanced as the Cucumber plants, but we do not like to grow them in so high a temperature by 5°. The seeds vegetate best in a bottom heat of about 90°; but when the seed leaves have grown nearly to their full size it is as well to remove the plants close to the glass. Growth made at a considerable distance from the glass is not nearly so healthy even if the plants have the advantage of bottom heat. Melons do well in medium loam with a little leaf soil added, potting the plants moderately firm. After tasting many Melons purporting to be new sorts we go back to a good strain, Turner's Scarlet Gem, which is no Melon come true to its character. Its fault is that the fruit has a tendency to crack when at the point of ripening, but this is avoided by good management. Gilbert's Victory of Bath, or at least Gilbert's strain of it, is the best green flesh; it is early, free-bearing, and of the best flavour. Coleman's Easton Castle is a very fine flavoured green-fleshed variety and is highly recommended, but it has not been grown in our own garden. Those who prefer white-fleshed varieties will find one of the best in Colston Bassett Seeding.

PLANT STOVE AND ORCHID HOUSES.

Much of our time has been taken up in washing and cleaning the plants in order to free them from insect pests. If this is not done before the temperature is increased in the spring the pests multiply very rapidly. We make a point of having all insects destroyed in the winter months. This is the most difficult to eradicate if they become established in the house. Tobacco smoke applied at frequent intervals during the winter is the best way to destroy them, but then the utmost care is necessary if there are young fronds of tender Ferns or any young growths forming on choice Orchids. Some of the best Orchid-growers will not fumigate their plants at all, they will rather destroy the thrips by handwashing with scapy water.

Allamanda Schottii cannot yet be dispensed with; it is noble golden flowers are exceedingly effective. A plant of it is trained to the rafters of the stove. The growths have been closely cut back, and when the wounds healed the plant was well supplied with water. Specimen plants of Clerodendron Balfourii have also been well watered and the wood tied-in to the trellis; the leaves had not quite fallen from the plants. Dipladenia Brearleyana has been making a little growth through the winter, and with increased warmth and more water at the roots it will now grow vigorously. The growths are trained to the roof of the house to be tied to the trellis on a future occasion.

We shall take the first favourable opportunity to repot any plants requiring to be done. We have repeatedly urged the importance of doing this work well, and not delaying the operation until the plants have suffered injury from the roots being too closely matted together or from their being in a bad state from deficient drainage. When valuable plants are in question it is

worth while not only to do the work well but also to see that the right material is used. Many gardeners have not a command of acres of turfy loam to select from, and but few can procure suitable peat from their own estates. To grow hardwooded stove plants well turfy peat and loam are absolutely necessary; indeed, it is a question whether many species that have been grown in peat and loam would not be better if only turfy peat was used. Gardenias, *Ixoras*, *Dipladenias*, &c., do well in peat, and when this is of a tough fibrous nature and the pots are of a large size the plants will last in good condition for several years without re-potting. The turf should be cut about 2 inches deep, and after it has been stacked about six months it is ready for use. It ought to be torn in pieces by hand, and not chopped up, as is sometimes done. Those who go to the expense of purchasing plants will find it true economy to purchase suitable soil to grow them in.

Anthurium Scherzerianum is now a widely cultivated plant, and is one of the easiest to manage. It succeeds best in very fibrous peat. The pots should be filled to half of their depth with clean broken potsherds, a layer of clean sphagnum should be placed over the drainage, and some sphagnum and potsherds ought to be mixed with the peat used in potting. Plants which are in an unhealthy state must be examined, and if the soil has become sour from any cause it is better to remove the whole of it and to re-pot in the same or even smaller pots than the plants were in previously.

Orchids in many instances are starting into growth, but it does not follow that because they are making their growths that root-action has commenced. Any plants which have commenced making roots should be transferred to fresh material if this is necessary, but when the plants are doing well it is often the best policy to leave them alone. There is always more danger from over-potting than from under-potting. Those who have not the advantage of a show house for plants in flower will have to be careful not to saturate the atmosphere of the stove with moisture; a compromise must be made between growing plants and those in flower. Such fine Orchids as *Phalenopsis grandiflora* and *P. amabilis* are easily disfigured by the flowers becoming spotted from a damp atmosphere or water from the syringe.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

- James Carter & Co., 237 and 238, High Holborn, London.—*Select List of Vegetable and Flower Seeds.*
 Wm. Paul & Son, Waltham Cross, London, N.—*Catalogue of Vegetable, Flower, and Agricultural Seeds.*
 William Bull, King's Road, Chelsea.—*Retail List of Select Flower, Vegetable, and Agricultural Seeds.*
 Felton & Sons, 56, Harborne Road, Birmingham.—*Seed Catalogue.*
 Little & Ballantyne, Carlisle.—*Spring Seed List.*
 Dremmond Brothers, 52, George Street, Edinburgh.—*Catalogue of Roses, Liliiums, Gladioli, and Garden Seeds.*
 Charles Lee & Son, Royal Vineyard Nursery, Hammersmith.—*Catalogues of Roses, Fruit Trees, Ornamental Shrubs, Roots, Seeds, &c.*
 W. & T. Sampson & Co., The Nurseries, Kilmarnock.—*Spring Catalogue of Seeds, Plants, and Implements.*

TO CORRESPONDENTS.

- * * All correspondence should be directed either to "The Editor," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.
 Correspondents should not mix up in the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (*A Regular Reader*).—Our "Garden Manual" contains all that you want. You can have it post free if you enclose twenty postage stamps with your full address.

HYACINTHS IN POTS (*J. E.*).—The failure was probably occasioned by your having planted the bulbs too deep. They should have their necks just above the surface.

WAVERS (*Constant Reader*).—There are too many facts needed to be known to us before we could give an opinion.

ORNAMENTAL-FOLIAGE PLANTS (*X. Y. Z.*).—We should not consider *Araucaria excelsa* entitled to be exhibited among them; but some judges have admitted it.

CAMELLIA FLOWERS SPOTTED (*F. E.*).—It is the result of the cold and wet season. If the trees had been secured the discoloration would not have occurred.

RENDEL'S TANK SYSTEM (*J. C. B.*).—We do not know any maker of the apparatus; many houses are glazed without pntty.

SCIENCES AND ART DEPARTMENT (*J. N. Bateman*).—We cannot state our obtain the information you ask for.

CLIMBERG ROSES (*Lady T. and Others*).—We have forwarded your letters to "A PARSON'S GARDENER," who has informed us that he will reply to them next week.

CUCUMBER PLANTS (*A Constant Reader*).—We presume your frame has four lights—put out one plant in the centre of the bed under each light! Four plants will be ample.

VINE IN GREENHOUSE (*Idem*).—The Vine should not be started with additional fire heat. It will commence growing naturally in March or early in April, and will grow and ripen its fruit without other heat than that accorded the plants. To start the Vine early and grow it with much fire heat would ruin the plants. There is no necessity to cover the border with fermenting materials; a top-dressing of rich compost is all that is required.

TEN-WEEK STROUDS IN POTS (*Idem*).—It will not be wise to take the plants up from the open ground when advanced for flowering, but you may give them their blooming pots (having them well established in small pots) when you plant out your other plants in the open ground. The potted plants should be plunged in the ground or in ashes, watering occasionally with weak liquid manure.

PROPAGATING MAJORETTA-FERN (*E. S.*).—Instead of covering the frond with soil lay it upon the surface of the soil, and the spores will be shed and in time grow. The soil should be kept moist and shaded. The plant may also be increased by dividing it when potting in March.

CINERARIAS "BLIND" (*H. C. P.*).—We are unaware of any cause for *Cinerarias* coming "blind," and we think your plants will expand their flowers in due time provided the plants are healthy. *Cinerarias* often remain a considerable time in the bud state at this time of the year. Have patience, and we think that you will be eventually rewarded.

SUPPORTING HYACINTHS (*A. D.*).—Any florist could apply you with wire supports for Hyacinths in glasses. A wire may be bent so as to be attached outside the glass. If in pots the accompanying wooden shows a mode of support. The bulbs should be plunged in the borders after flowering and without injuring the roots, but they will not flower well next year.

INARCHING VINES (*A. B. P.*).—We fancy Gros Colman would not be a good stock to work upon. The best sort to work on it would be Black Hamburg. Work Royal Muscadine on Early Snyras. These (Black Hamburg and Royal Muscadine), are the best two Grapes for a cool greenhouse.

ROSES AND CAMELLIAS (*Hull*).—As your Rose bushes have been planted we advise you to mulch the surface of the ground with manure. Syringe the leaves frequently with clear water in dry weather, and keep free from insect pests. Frequent syringing is the only way to keep Roses in health. Any sorts of Camellias will stand the winter, but those varieties which open well under glass should not be planted-out, as the flowers of others will not open freely out of doors.

Fig. 12.



PEA FOR EXHIBITION (*A Young Gardener*).—Veitch's Perfection.

FLOWERS FOR BOUQUETS IN AUGUST (*Idem*).—*Staphanotis floribunda*, *Eucharis amabilis*, *Oxotylus crispus*, *Statice profusa*, *Dendrobium formosum*, and choice Roses in bud.

SIX ROSES FOR EXHIBITION (*Idem*).—Charles Lefebvre, La France, Marie Baumann, Princess Beatrice, Alfred Colomb, and Maréchal Niel.

HOUSE FOR VINES AND PEACHES (*A Lover of Fruit*).—A house 15 feet wide by 25 in length will produce one hundred bunches of Grapes. We prefer straight to curved rafters. Our Peach or Nectarine to square inches of surface is an average crop. Plant the trees in an inside border; but the borders ought to be both outside and inside.

FIS IN SPAN-ROOFED HOUSE (*W. R. A.*).—You will be the most successful if you plant the trees out. There will be a border 3 feet 3 inches wide on each side of the path, and if you form a border 1 foot below the ground line it will allow you to put in a foot of rubble, and to fill up with compost to the top of the front wall, 3 feet. Plant one row of Fig trees down the centre. You can plant five trees on each side—viz., three Brown Turkey, two Gros Verts, two Bourjois Gris, two White Mareilles, and one Singleton.

ZONAL PELARGONIUMS FOR EXHIBITION (*A Constant Reader*).—The finest specimens we ever saw exhibited were grown in the following manner:—The plants were planted out in the nursery in May or June, and in June and July plenty of spawn to form good specimens during summer and autumn. The plants were potted into 7-inch pots before they received any injury from frost; they were wintered in a light house, and re-potted into their blooming pots (6 inches in diameter) about March or April; growth then progressed rapidly, and as they grew the roots were tied into position, and when the pots were quite filled with roots diluted manure water was freely applied. They may be had in good order about the middle of June. As your show is in August, it would be necessary to pick off all flower trusses that appeared until the end of May or the first week in June.

HEATING LEAN-TO VINERY (*J. Chapman*).—Two small stoves would be better for your purpose than one large one, as the heat would then be more regularly distributed throughout the house. We cannot say whether burning paraffin in stoves without flues would be injurious to the tender young shoots of the Vines or not. We have seen such used in rooms, and have not felt any inconvenience from them. Try one stove first, and then add another if that is not sufficient. We would rather have a brick flue, as being more safe; but there is no reason why you should not try stoves. The Grapes would be ripe by the middle of July if the Vines are started at once.

VINES IN POTS (*T. Maybury*).—Surface-dress the pots with loam and decayed manure in equal parts, and when the roots work into the dressing water occasionally with weak guano water.

BLACK ON FERN (*J. P. P.*).—It is a parasitic fungus. Sponge the fronds with a mixture of soft soap and water.

NAMES OF PEACHES (*J. P.*).—Hubbard's Farmkin. (*Struan Robertson*).—Reinette Diel. (*Graetz*).—1, Court of Wick; 2, Ords; 3, Marzi. (*Col. Simpson*).—1, Cox's Orange Pippin; 2, We cannot identify. (*W. W.*).—Apple; 1, Winter Quoining; 2, Winter Greening; 3, Not known. Pear: 1, Leopold's Pear.

NAMES OF PLANTS (*O. O. S.*).—*Libonia floribunda*.

POULTRY, BEE, AND PIGEON CHRONICLE.

WOLVERHAMPTON SHOW OF POULTRY, &c.

The eleventh annual Exhibition was held in the Exchange Hall, Wolverhampton, on the 24th, 25th, and 26th ult. This year a number of commendable alterations have been made in the arrangements of the Show. Hitherto it has been held on Friday, Saturday, and Monday, thus causing the birds to be away from home on the Sunday, and objections were raised by a number of poultry fanciers to having the poultry exhibited in the same room with dogs, the noise and barking of which being very injurious to the birds, by keeping them in a state of continual excitement. It has been consequently, wisely we think, determined to hold a separate Show for dogs in May. The number of classes have been extended, and a fourth prize added to every poultry class. Classes for cage birds have also been added, and any number of pens at prohibitory prices were allowed to be sent in the same basket. The above alterations were made in the hope of inducing a larger number of entries, and we are pleased to record that so far they have been successful, the entries as compared with last year having increased something like 30 per cent. Of poultry there were 877 pens, of Pigeons 161, and Cage Birds 74, or a total of 1113, an increase of about three hundred. The room, however, was too small for an exhibition of such proportions, and consequently most of the pens had to be contracted in size, and many were in positions where they could not properly be inspected, otherwise the arrangements were all that could be desired, and the Committee assisted with praiseworthy zeal in penning and repacking the birds, which were all sent off during the Thursday night. Taken as a whole the Show was undoubtedly the best in all respects which has ever been held under the auspices of the Society.

Game headed the list, and as a whole they were of remarkable quality, the *crème de la crème* having put in an appearance. In old cocks all the prize birds were Brown Reds and carefully selected. The fourth-prize specimen however struck us as being a grand bird, but there must, we suppose, have been something in the handling of him which prevented his taking a higher position. We could imagine no other reason for it. Black Red cockerels were a large class, Mr. Matthews as usual taking first and second with stylish hard-feathered birds, which undoubtedly were the pick of the lot. Brown Red cockerels contained a few birds of great merit. Here again Mr. Matthews was first, closely pressed by a stylish cockerel of Mr. Martin's, the colour of which we preferred to the first, but he did not quite command the reach of his successful rival. In the Any other variety of cockerels the first, second, and third-prize birds were Duckwings, Mr. Matthews again occupying the pride of place with a bird beautiful in style, fine in feather, and capital colour. A good orange legged Pile was fourth. In Black or Brown Red hens all the winners were Brown Reds, and Duckwings won all the prizes in the Any other variety class, in both of which classes Mr. Matthews was again *facile princeps*. We, however, should have transposed the positions of the second and third prize birds.

Malays were a good class, but the clay-coloured hens seemed to take the preference over the dark Partridge. It struck us, however, that the Game cross was very apparent in several of the specimens.

Brahmas.—The competition was strong in all the classes, the cup for the Darks going to Mr. J. F. Smith for an old cock of extraordinary good colour, remarkable quality, and admirable condition. Second a bird of capital quality but not so heavily built. Old Dark hens mustered twenty-three pens, but many of them showed a brownness in colour which was not pleasing; but probably the thoroughly unfavorable season we have just passed through may have had much to do with this. The class generally, however, was a good one, though many being old birds were rather out of condition. Seventeen pens of Dark cockerels competed, the first and second prizes going to highly meritorious specimens. Dark pullets brought a strong competition, first being a grand bird, shown in admirable condition, her pencilling being of a character rarely excelled. Second was a bird of extraordinary character, and when we mention that independently of the four prize specimens the Judge deservedly awarded three very highly commended, an idea of the strong competition may be imagined. In Light Brahma cocks Mr. Horsfall scored another victory by taking the cup for the first with his old Bristol champion, but he was not in such good condition as usual and looking a little the worse for wear. Out of the nineteen pens in this class only eight were mentioned by the Judge. Light hens were of an even quality throughout rarely seen, and among the Light cockerels were some of the grandest young birds that have been shown this season. A few among the Light pullets were of very high merit, but the generality of them were wanting in condition.

Dorkings were about the smallest class in the Show, the cup

going to a pen of good-sized Darks. In the Any other variety class first, second, and fourth were good Whites, the first very pure in colour. Third were Rose-combed Cuckoos.

Cochins throughout were wonderfully good, and taking them all through we do not think we have seen a better lot this season, but they were situated in about the worst position in the Hall, in a bad light, and the pens too small for birds of such size, consequently detailed examination was scarcely possible. In the old Cinnamons, in Mr. Burrell's pair was his old champion cock, and we should have felt quite disposed to have put him again in the prize list. Notwithstanding his mealy wing and a tinge of white in the tail he is a grand bird, a wonderful Cochin. The second-prize pair did not match, the cock being a perfectly Dark Cinnamon. The third-prize pen on the contrary matched splendidly, were fine birds, and had our preference for second honours. We also preferred the fourth-prize Buff pullet to any in the class, for besides being equally good in other points she excelled her more fortunate competitors in her colour. We do not remember to have seen a better lot of Partridge Cochins, and both in these and the Buffs, so far as we could gather, with the exception of the above-mentioned little difference of opinion the awarding of the prizes seemed to have given general satisfaction. Some little disappointment, however, seemed to exist in regard to the judging of the Whites and the award of the cup to pen 384, it being alleged by some most competent critics that there were several better in the class, and in particular the highly commended pen 689 (Tomlinson). The principal objections to the cup cock seemed to be that, although he was a very large bird, he had too much daylight under him, was too hollow at the front, had considerably too much leg, and stood badly—was, in fact, inked. The second-prize pen we believe contained the cock which won first at Birmingham. As a lot, however, the class was the best we have seen for a long time.

Houdans.—Good classes, and in both old and young the hens and pullets were superior to the cocks. The first-prize chickens evidently won on account of their perfect comb and crest. It struck us that all the winners had the desired leaf comb. In other variety of French fowls first were Orives and second La Flèche. A good class, and as in the Houdans the hens and pullets comprised the better part of the pens.

Spanish.—Noted as the Wolverhampton Shows have always been for the quality of their Spanish classes, they were, we think, surpassed this year. There were only two classes, one for cocks the other for hens irrespective of age, and the general merit throughout was such that we cannot enlarge it too highly. An additional cup given by the Committee was awarded to an old cock, and in this class, in addition to the four prizes, four very highly commended and five highly commended were also added. In regard to the hens the Judges expressed an opinion that they never saw so keen a competition generally throughout a class as took place here. First was a grand bird in exquisite feather and condition, and we believe ran the cup cock close for the extra award.

Polands were divided into two classes, "White-crested Blacks," and "Any other variety." The cup for Polands, French, and Spanish for some reason going to the Black Polands. In the "Any other variety" a good pair of Silvers belonging to the Countess of Dartmouth were first, closely pressed by Mr. Beldon's Dorchester cup pen, the effects of the recent journey of which evidently told against them in the competition. Third were good Golden, while Mr. Adkins on this occasion had to content himself with a fourth, but it is impossible both to sell one's cake and eat it.

Hamburghs were very good classes especially the Golden-spangles, and it must have been a difficult task for the Judge to select the winners, so many being good. First and cup fell to Mr. Dean of Keighley, Yorks, with a very fine pen indeed. In Silver-spangles Mr. Beldon won with a pair, the cock in which is the most perfect in handling we remember to have seen. He is in this respect something to remember. The first-prize pen of Golden-pencilled contained an old cock which we remember in the same position at Birmingham matched with a very good pullet. Silver-pencilled were a small class, but the winners very good.

The Variety class was a large and excellent one, first being good Black Hamburghs, second Cuckoo Cochins, third White Leghorns, and fourth Bearded Sultans. There were Selling classes, one for Brahmas, Dorkings, and Cochin cocks, which comprised seventy-eight entries, first and third being Buff Cochins, and second a Partridge Cochin. A class for pairs of hens same variety, and two classes for any variety except the above, one for cocks and the other for hens, the prices in all not to exceed 50s. They comprised many good birds, which no doubt soon found purchasers.

Ducks.—The Aylesburys were few in number, but the winners of high quality. The Ronens were also excellent, and in particular the second-prize drake, but many were not over their match. The very pen brought in the Any other variety class received favourable notice from the Judge, the whole being of an

ing from the advantages accruing from the cultivation of the smaller varieties, it is to the larger that we must look to advance the breeding of Rabbits and to educate popular feeling in their favour. Classes for Belgian Hares are, however, being provided at our principal Rabbit Shows—as for instance, the Manchester Show of the New National Society of Rabbit fanciers, the late Crystal Palace Show, and several of the larger county shows, so that in a few years the position of this variety may be confidently expected to improve. It certainly should do, as it has many claims upon our good opinion, not the least of which are its great value as a flesh-producer and the ease with which it can be reared. Among the minor uses of which it may be made we may mention its extreme value as a parent. The difference in size and appearance can hardly be imagined when a prick-eared doe is paired to a buck of the breed instead of to one of its own size. The difference in the cost of keep is practically nil, and the primary outlay but a few shillings, while the success of the venture will surprise the most sanguine speculator. As the last point in its value may be mentioned its extreme usefulness for turning down in warrens. The breed being very hardy can easily find its own living and is very useful in improving the stock of the ordinary warren. Rabbits of both sexes turned into a warren will soon produce appreciable results.—G.R.A.

PROGRESS OF APIARIAN KNOWLEDGE.—No. 2.

In my former communication on this subject I began with the history of the queen bee, and pointed out that in one or two points—notably in the case of the wonderful discovery of Von Siebold—apiarian knowledge had made considerable strides since the days of Huber. In his discovery of the virgin birth of drones we have a most surprising fact in nature, and one which adds greatly to the dignity and interest of the study of bees. Practically, so far as we know, no great result of benefit to the profitable management of bees has come out of it, because I think it is not yet ascertained that these virgin-born drones have the power of propagating the species. Presumably they have, otherwise it is difficult to see the use of this extraordinary power of developing male life, seeing that usually drones are in excess in most hives. A most interesting point would be the discovery that worn-out queens retain the power of producing drones at the close of their existence—as the last vital act of nature after they have ceased to be capable of producing workers, for this would show that *parthenogenesis* in their case was a special provision for maintaining the royal succession, even at the ordinary periods of the year when drones are ordinarily absent from the hive. Let science again direct our experiments to the elucidation of this question. If our friend Mr. Woodbury were alive his patient perseverance would soon find the answer.

Another point connected with the queen bee in which we have gained a step in knowledge, is the ascertained fact that queens are not always animated with that intense jealousy and hatred of one another which Huber had observed; indeed, it seems as if such jealousy might prove the exception rather than the rule. In several instances reported in this Journal two queens have been observed living amicably together in the same hive, performing the functions of their condition side by side without molestation either from the bees or from one another. There is no doubt, however, that one queen in a hive is the ordinary rule, save at swarming time, when very often two or more young queens will be found for some days roaming about the combs without let or hindrance. After a time they disappear, numbers being destroyed in the act of swarming. These are probably in most instances despatched by the bees themselves, and not so commonly, as is supposed, by the queens attacking one another. The ordinary method by which the common bees destroy unnecessary queens is by suffocation and starvation in the form now termed "queen encasement"—a method of regicide which was frequently noticed and observed by Huber; but he is certainly mistaken when he says that bees never sting the queen to death. The great jealousy of the queen seems to be excited, as he constantly noticed, by the presence of young queens in the pupa state when swarming is at hand. If present, the mother queen will eagerly attack the royal cells, tear a hole in each sufficient to admit of her abdomen being introduced, and sting the more or less developed occupant to death.

Again, Huber tells us that he never could introduce a new queen successfully into a hive till after the lapse of twenty-four hours or more after the removal of the old queen. I generally find a quarter of that time sufficient for the purpose, provided the bees have really become generally aware of their loss. It is essential that they should feel thoroughly distressed, and should have been for some hours in despair, before they will hail with pleasure the presence of a new queen. Nor is it then safe to introduce a stranger queen without using much precaution, because some bees discover their loss less rapidly than others. The fact, however, is beyond doubt that bees will wel-

come a new queen very much earlier than is generally believed. I have proved it many times, even so lately as last autumn, as has been recently recorded in the pages of this Journal.

It is still believed that queen bees never leave the hive save at swarming time for any purpose save to mate with the drone in the open air. I have no evidence to produce to the contrary. As, however, I am inclined to believe they do occasionally quit the hive at other times, it is a question whether they mate with the drone more than once in their lives. My attention has been directed to several instances where hives have unaccountably lost their queens in the full vigour of life—cases where they have been seen walking about the entrance, and where they have been found in the perilous bond of queen encasement suspiciously near the entrance just within the doorway. But evidence is not sufficient to authorise assertion of the fact. It would be very desirable if special attention could be directed to this question by our numerous apiarian friends.

I believe I have gone through all matters connected with the queen bee in which there is reason to think that our knowledge betters Huber's instruction. If any of your readers can correct or supplement what I have written it is open to them to do so.—B. & W.

MOVEABLE VERSUS FIXED COMBS.

Your old and excellent correspondent, Mr. J. Lowe, in connection with the above discussion, contributed an article entitled "The Battle of the Hives," wherein he rakes together some of the ashes of a controversy he and I engaged in four years ago; and from the little support afforded by the fraternity to the latitudinarian views he then promulgated I thought he had seen something of the untenableness of his position, but the old adage is often verified—

"A man convinced against his will
Is of the same opinion still."

From his theoretic eminence Mr. Lowe's eye sweeps over the distant American continent and scans our nearer home fields, and the din of "The Battle of the Hives" so rates upon his ear, that at the mention of the simple question—"Which is the best hive?" sounds to him a very foolish one, and causes him to add, "Certainly I could not with all my experience presume to answer it;" to which I can only reply, How consummate, then, must be the folly, how limited the experience of those bodies of apiarians banded together in the south as the "British Bee-keepers' Association," and in the north as the "Caledonian Apiarian Society," with all their writer branches, when they actually give so liberally out of their means the much-coveted prize, and decorate with their medals Mr. Lowe's myth "the best hive" in all their sections? Is not the prize list of every apiarian society in Europe and America a protest against your correspondent's hypothesis?

The recent discussion originated in a comparison of harvest results obtained not from *all* but simply the Stewarton hive, and moveable combs and system of management usually followed with it on the one side, and the large straw hive with fixed combs as championed by your correspondent Mr. Pettigrew on the other. So far as Mr. Lowe can venture from his equality stronghold, he rather lends his influence towards fixity and the straw skeps; but I am afraid Mr. Pettigrew will look rather askance at his sceptical ally, for does not he (Mr. Lowe) proclaim "That no such adventitious circumstances as the kind of hive can have much of any influence on the amount of stores collected by the bees," and is not Mr. Pettigrew justly proud of the large harvests reaped by his improved hives?

From your correspondent's standpoint we will all very readily admit that the hive cannot of itself make nor reap, nor even store honey, no more than the pen in my hand can of itself write these lines: they are both pieces of inanimate matter. It is puerile to state this, but so far as we can comprehend it is the gist of Mr. Lowe's contention, a mere playing upon words, which we fail to see can in any way further the cause of apiculture we have all so much at heart. The hive must be peopled, the reapers have their implements, even the store its porters, the writer his pen, and then what follows? In exact proportion as they are severally efficient will be the quantity and quality of the work produced. Mr. Lowe may deny this;—but if we can only say it may amuse the theorist to throw up its glittering soap bubbles, it only damps the practical hand to crush them.

With reference to my competitive hives, the Stewarton and straw, a correspondent, "W. J. C." says, "The Stewarton was doubt was crammed completely, although we are not told so," to which I reply, that it as well as the straw were "crammed," but only with the progeny of their respective queens, and neither had any extraneous aid whatever saving what was narrated. With regard to the same hive Mr. Lowe says, "There is some ground for suspecting that it was not right with that [straw] colony," but I can assure him it was in every way in perfect health and condition; and further, that "the same results might occur even if the competing hives were both Stewartons," this

I deny. And then follows, if "A RENFREWESHIRE BEE-KEEPER" thinks the reverse he will kindly state how the results are to be otherwise accounted for. Is it by reason of the form, material, or construction of the Stewarton hive which enabled it to eclipse so greatly the straw skep in smothering stores? And I answer in the affirmative, holding that if both your correspondents were more practical spairiuses they might have seen it for themselves. First, "form," the straw hive being the usual dome shape, prevented any super sitting conveniently on it, saving the Abingdon glass, and even to get it placed I had to cut out a portion of the apex with my penknife, and lashed the glass with cord to the protruding cross sticks. Then the material of the super portion of that hive being glass told much against the return, the additional labour to get the combs built and attached with extra expenditure of honey to keep up the temperature continuously therein while storing and sealing went on. I have heard it estimated by experienced bee-keepers in glass-filling that their bees would readily store from 3 to 4 lbs. honey in wood for every one in glass, and to crown all, the extra breeding and supering area in the Stewarton over the straw must alike have stimulated the fertility of the queen and the acquisitive principle, in the ever-increasing band of her more numerous staff of honey-gatherers.

In opposition to your correspondent, Mr. Lowe's theory, "That no such adventitious circumstances as the kind of hive can have much or any influence on the amount of stores collected by the bees," I can give a striking and conclusive illustration. There stands in my apiary for the last ten or twelve years, including the magnificent seasons of 1868 and 1876, a by no means small hive, with usually one of my most prolific queens at its head, a non-warmer in perfect health, a foul cell never having been seen within it; and yet, while those "best hives," my marvellous Stewarton reapers, were throwing off in those good years in their nine and ten supers a piece, if since its establishment has not yielded up a ounce of honey; on the contrary, each autumn had to be liberally fed. And how can you account for the astonishing difference? as to the perplexed reader. We will allow Mr. Lowe to do so. By reason of the form, material, and construction, the defaulter being the observatory stock of—A RENFREWESHIRE BEE-KEEPER.

OUR LETTER BOX.

EGG WITHIN AN EGG (J. G. S.).—We have seen a perfect egg within another perfect egg, but it is very unusual.

LEGIONS AND DOMINIONS (A. H.).—They have been advertised. You may refer to the advertisements in our columns.

NUMBER OF HENS (C. S.).—Twelve hens are too many for one cock if the eggs are to be raised. Six or eight will be enough, but you may try eight. The number of hens that may run with a cock is a question of temperature. We know from experience that in December you cannot depend on the eggs of four hens running with a cock, however young and healthy. At the end of January you may put six hens safely, at the end of February eight, at the end of March ten; after that you may, if necessary, put twelve, or even eighteen.

GREENHOUSE FLOOR FOR CHICKENS (Idem).—The floor of a greenhouse is always suggestive to us of damp bricks. Nothing can be worse for chickens. If you mean to keep them there, cover the floor with very dry road grit. We do not like the atmosphere of a greenhouse. We have now strong-growing chickens. We keep them in an old disused barn with the old earthen floor. They are supplied with dry grit and with growing grass. They have no artificial heat, and have only beer to drink. We always find January chickens the easiest to rear.

ROUEN DUCKS (F. G. S. R.).—There is nothing to be said about Rouen Ducks beyond that which was known many years before the present breeders took one or were known. It is a matter of fact that they should be counterparts of the Mallard and Wild Duck. The difficulties of judging in those days were the bills of the Ducks and the rick of the drakes. Then there came the white flight. This gave trouble for a time, but it was disposed of. It is useless to state the fact that wild birds are the models on which to judge the Rouen. Twenty years ago there were people who sold their leaden-coloured bills as admissible, just as you do for "dark stems." The opinion now quoted is not good for much. Chain armour belongs to the Gadwall, not to the Rouen. The "curtlet" feathers have nothing to do with the question. The Rouen is principally a bird of size and weight—it is a bird of food. Formerly it was Sibb. below the Aylesbury, now it is above it in weight. It may suit those who have small birds to save themselves behind feather, and those who have large birds to depend on size. We blame neither, we have no right to do so; but we believe in Nature, and we should be anxious to know who set forth that Rouen Ducks or drakes should have dark feathers. Looking at the two we have no hesitation in preferring the light feathers. We cannot agree with those who would make food birds birds of plumage; and we can only add the birds for exhibition, as belonging to the food of a country, are not only added if they have no glaring defect according to the weight they bring to the common scale, but to the particular shade of three or four feathers. This was and should be the aim of poultry shows.

BELGIAN HARE RABBITS—"I wish 'GETA' (p. 73) would give us the ground on which he contradicts the assertion which is now generally accepted—namely, that the Belgian Hare Rabbit is a cross. That cross-bred is a title in a general fact, but the case of these Hare Rabbits has found its way into scientific books and into the popular conception. I was, therefore, surprised to see it so flatly contradicted.—G. S.

THE GROWTH OF CANARY'S BILL (Amer).—All birds in confinement are subject to an overgrowth of the beaks and claws, and it is necessary that Canaries and other small cage birds, in particular be provided with grit sand on the cage bottom, and likewise a piece of mortar to peck at, placed betwix the wires. The mortar or a piece of cuttle-fish hung inside the cage will

engage the attention of the birds' beaks, and in a great measure keep down the horny growth of the beaks. Cuttle-fish may be obtained from the London or other bird dealers. The most effectual remedy it to pare the beak with a sharp pen-knife, or with the claws with either a knife or pair of scissors, but not with a file. The end of the red ray or vein in both beaks and claws, when held against a strong light, will show exactly how far the operations may be performed. Aged birds are more liable to an over-growth of the beaks and claws than young birds, but even two-year-old birds require their claws trimmed, which enables them to obtain a better grasp of the perches. Many valuable cage songsters have been lost through being found head downwards, trapped in either the wires or perches with their sickle-shaped claws.

AVIARY IN CONSERVATORY (F. P.).—You may with a fair amount of success be able to keep about fifteen or, at the most, a score of small birds, in the aviary which you give us the dimensions of. Canaries will live in harmony with such birds as Goldfinches, Brown Chats, Siskins, and Redpolls, for each being granivorous in their habits will fare well with the same diet. A mixture of hemp, millet, canary, rape, and fax will suffice for their rations. On the bottom of the aviary let there be a plentiful supply of rough sand, and if the birds have access to a bath they will keep their feathers in good order. Two or three Mule birds would add to the variety in the above-named lot, and variety is worth a consideration. If you can avoid it, do not let the perches directly cross over each other, or those beneath will become soiled. For an aviary, we think if the perches be fixed in a semi-transverse direction a most objectionable arrangement will be avoided.

HIVES OF BEES BY RAILWAY (J. H. Howard).—The loss by breaking down of the combs must be borne by you. You directed how the hives were to be sent, and refused to let the vendor pack them as he wished.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Baromet. at Sea Level.	Hygrometer.	Direction of Wind.	Temp. of Shade.	Shade Temperature.	Radiation Temperature.	In. On Grass.		
	Dry.	Wet.		Max.	Min.	In. On Grass.			
We. 21	29.18	42.0	4.8	W.	59.8	46.1	41	59.1	0.129
Th. 22	29.751	45.2	44.8	S.W.	58.8	51.8	35.8	64.6	0.242
Fr. 23	30.097	56.0	34.8	N.W.	59.6	47.7	39.8	74.3	1.23
Sat. 24	30.176	48.0	31.8	S.W.	59.0	45.2	39.8	68.4	0.162
Sun. 25	30.0'5	45.0	41.8	S.	57.5	51.9	34.6	69.3	2.29
Mo. 29	30.167	48.5	35.6	S.W.	59.1	49.6	34.0	72.9	0.90
Tu. 30	29.243	47.0	45.0	W.	40.8	48.4	35.3	57.3	52.0
Means.	29.955	44.0	38.1		58.9	47.6	38.7	70.7	29.6

REMARKS.

- 24th.—Rain in the night and early morning, but fine by 8 A.M.; the day throughout bright and pleasant. Lunar halo.
 - 25th.—Rain in the night and early morning, but fine by 11 A.M.; the day throughout bright and pleasant.
 - 26th.—White frost in morning; very fine all day and night. Lunar halo.
 - 27th.—Rainy day and night.
 - 28th.—Damp, but not rainy morning, rain in middle of the day; but fine afternoon and evening.
 - 29th.—Fair, but very bright at noon; rain in afternoon, and very high wind in the night.
 - 30th.—Wind very high, with sudden heavy showers, with bright sun at intervals all the day; very heavy hail shower at 10 A.M.
- Rain of temperature greater each last week, and weather variable. Hot sun on 24th and 30th.—G. J. SIMONS.

COVENT GARDEN MARKET.—JANUARY 31.

Good samples of late Grapes are now becoming scarce, and consequently realising good prices. The Apple market remains the same, with business very quiet.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0	1	0	0
Apricots.....	1	0	0	0	0
Chestnuts.....	1	0	0	0	0
Currants.....	1	0	0	0	0
Figs.....	1	0	0	0	0
Filberts.....	1	0	0	0	0
Gooseberries.....	1	0	0	0	0
Grapes, house.....	1	0	0	0	0
Lemons.....	1	0	0	0	0
Melons.....	1	0	0	0	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	1	0	0	0	0
Asparagus.....	1	0	0	0	0
Beans, Kidney.....	1	0	0	0	0
Beet, Red.....	1	0	0	0	0
Broccoli.....	1	0	0	0	0
Brussels Sprouts.....	1	0	0	0	0
Cabbage.....	1	0	0	0	0
Carrot.....	1	0	0	0	0
Capsicum.....	1	0	0	0	0
Cauliflower.....	1	0	0	0	0
Celery.....	1	0	0	0	0
Colewort.....	1	0	0	0	0
Cucumbers.....	1	0	0	0	0
Endive.....	1	0	0	0	0
Fennel.....	1	0	0	0	0
Garlic.....	1	0	0	0	0
Herbs.....	1	0	0	0	0
Horseradish.....	1	0	0	0	0
Lettuce.....	1	0	0	0	0
Leeks.....	1	0	0	0	0

WEEKLY CALENDAR.

Day of Month Week.		FEBRUARY 8-14, 1871.		Average Temperature near London.		Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.	
Day.	Night.	Day.	Night.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	Days.	m. s.	Days.	m. s.
8	TH	Royal Society at 8.30 P.M.	45.4	52.1	88.8	7	27	5	2	5	13	11	35	24	14	30	39		
9	F	Quekett (Microscopical Club) at 5 P.M.	45.0	51.5	88.3	7	25	5	4	6	2	0	34	25	14	30	40		
10	S	Royal Botanic Society at 3.45 P.M.	44.4	52.6	87.0	7	28	5	6	6	37	1	42	26	14	30	41		
11	STW	QUEENSGATE.	44.1	52.7	86.4	7	31	5	8	7	3	2	55	27	14	30	42		
12	M	London Institution at 5 P.M.	45.6	52.4	87.0	7	30	5	9	7	21	4	9	28	14	28	43		
13	TU	Royal Medical and Chirurgical Society at 8.30 P.M.	44.0	52.3	86.6	7	18	5	11	7	35	5	21	29	14	26	44		
14	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	45.3	50.5	87.9	7	16	5	13	7	46	6	34	0	14	23	45		

From observations taken near London during forty-three years, the average day temperature of the week is 44.5°; and its night temperature 30.3°.

GLAZING WITHOUT PUTTY.

OBSERVING that inquiries have been made on this subject I submit my experience. I do not approve of glazing sashes entirely without putty, but I am firmly of opinion that "top putty" is worse than useless. Many years ago when the roofs of the houses under my charge were undergoing the usual routine of repainting, &c., it occurred to me to have the putty entirely removed from one length of lights—painting the sashes without it, the remaining portion of the house being repainted, painting, of course, over the putty after it was set. The lights which have not been puttied for nearly twenty years are now in better condition, and there has been less leakage from them than the others which have been periodically repaired in the orthodox manner of patching the putty and painting over it. Unless very special care is taken the top putty on the roof of a vinery or forcing house will shrink and in places become separated from the wood. The crevices between the glass and the putty, and the putty and the wood, may be so minute as scarcely to be noticeable, yet they are sufficient to admit the water; and when once the water penetrates beneath and behind the putty it cannot easily evaporate and the wood is almost continually wet, accelerating its decay, and the putty is also prematurely peeling off, rendering further, and as I believe unnecessary, outlay incumbent in paying for time and material in repairs and making the roof watertight. I believe, therefore, that "top putty" is injurious, but I think bottom putty valuable.

Acting on my direct experience and on much observations in different places, and supported by the advice of a very practical joiner and glazier, the last house erected under my charge was glazed as it was termed "without putty," but in reality without "top" putty only, the glass being firmly bedded in putty—thus putty was used beneath the glass, but not above it. Special care was employed in placing the putty in the rebates of the sashes, using it good, plenty of it, and placing it in regular layers—the last condition being very important. The wood previous to applying the putty was well painted twice. The glass was firmly—very firmly—pressed down into its bed of putty, each square being secured in its place by driving two small copper tacks into the sash-bars at the lower corners of each square; the "lap" of the next square above, of course, keeping that portion secure. When the glazing was completed three good coverings of paint were given the upper portion of the sashes, painting also about an eighth of an inch on the glass. When completed the first shower of rain was anxiously waited for. In due time the shower came—a "regular rainy day"—and although the roof was rather flat not one drop of rain came through it. Further, during the deluge which has been lately experienced the roof has proved to be perfectly "watertight," while in other houses glazed with top putty the water found its way through in an unpleasant manner. I am quite cer-

tain that the roof of a glass structure having no putty on the outside can be kept in good condition with less cost than can one where the top putty is used in glazing; therefore by the non-use of the outside putty two savings are effected—first, cost in the saving of material, and after-cost in keeping in order in saving both material and labour. But while I consider top putty worse than useless I lay special stress on the importance of good bottom putty (and good workmanship) for embedding the glass. There may be others who do not see the value of putty at all, and they may have good reasons for abolishing it; but I can only record my actual experience.

All sashes, for anything I know to the contrary, may be glazed as I have suggested—I mean sashbars do not need to be made specially for the carrying-out of the plan. It is true that when top putty is not used the rebates of the sashbars do not need to be so deep, but that is a point of no real importance. I am not aware that my experimental lights from which the putty had been removed were ever observed by any visitor, so that their appearance was not in any way singular. The glass is quite as firm without top putty as with it, the roof is more efficient, and the appearance is as good. When the squares of glass are at all large—say 20 inches by 12—glazing is much more quickly done without top putty than with it; but with small squares and closely arranged sashbars outside, putty cannot perhaps be so advantageously abolished.

As the result of my experience my plan for the future will be (until a better mode is pointed out) to abolish the use of outside putty entirely, but to use good bottom putty liberally and well in the glazing of glass structures.—STEWART AND GARDENER.

THE CULTIVATION OF THE RASPBERRY.

"PRACTITIONER" on page 67 has alluded to the cultivation of the useful and popular fruit, confining his remarks to canes trained to stakes or trellises. I wish to remind all whom it may concern that Raspberries may be grown successfully without being trained at all. In the fruit fields of Kent, and also in other parts of the country, many acres of land are devoted to Raspberry cultivation, and excellent crops of fruit are obtained from canes which neither have nor require any stakes or wires to support them.

When grown largely in open fields the canes are planted thinly—that is, the rows are nearer 4 than 3 feet apart, the "stools" in the rows being 18 inches distant from each other. The canes are planted singly, and are mostly kept singly, though occasionally two and now and then three are allowed to grow from each stool, provided they are of a short-jointed character. The principal point aimed at is the securing of stout short-jointed canes. These are essentially fruitful, and are sufficiently strong to be "self-supporting;" hence the adoption of the practice of planting thinly and preventing after-crowding. The canes thus thinly planted in an unshaded place seldom grow tall; they are pruned during the winter,

each being left at the height of 3 feet. With an otherwise judicious system of culture, as manuring and cleanliness of the ground from weeds and suckers, valuable "hedges" of fruit are produced sufficiently rigid in themselves so as to be secure from injury by boisterous weather, and the fruit can be conveniently and expeditiously gathered. Raspberries thus cultivated yield (taking one year with another) highly profitable crops, and the plan is worthy of adoption in the vicinity of large towns, where the demand for this favourite fruit is frequently greater than the supply.

Raspberries also grow as well, if not better, than any other fruit under the shade of trees. The home of the Raspberry is in the woods, and this fact conveys a hint that it may be profitably turned to account as an undergrowth crop. In many fruit orchards it is thus turned to account in a profitable manner. When this mode of culture is adopted it is found of special importance to plant thinly—that is, the canes should be grown singly, each having 3 or 4 feet of ground area. When the ground is kept clean and suckers are prevented growing, valuable crops of Raspberries are produced in orchards where the large trees are not closely planted and the shade is not exceptionally dense. It is not uncommon for Raspberries thus grown to produce crops when those in the open do not do so. Late spring frosts are frequently inimical to the Raspberry crops, and I have more than once known "wild Rasp" in woods plentiful when the canes in the garden have been barren. The woods afforded shelter from spring frosts, and similarly the shelter produced by orchard fruit trees has insured fruit on the "undergrowth" crop—the Raspberries. When the soil is heavy the leaves of the trees and canes afford almost or quite sufficient nourishment for the Raspberries, but a dressing of salt and soot, or guano, applied during showery weather in the spring is a profitable investment. When Raspberries are grown in the manner described they do not injure the fruit trees. I am intimately acquainted with an orchard having an undergrowth of Raspberries, and the trees in that orchard of Apples, Plums, and Pears, have for a period of twenty years produced crops of fruit fully equal to any in the neighbourhood where Raspberries have not been grown beneath the trees. The undergrowth crops in the orchard alluded to have been of substantial value to the owner.

Raspberries may also be grown in gardens on the same self-supporting principle. I have had excellent crops without the aid of either stakes or wire, and without bending the canes into a series of arches, and while the rows in summer have been attractive by their productiveness, in the winter they have never been considered unsightly. When wires and stakes are procurable it is right that they should be used in gardens, but I would not have anyone deterred from growing Raspberries on account of the absence of these extraneous supports.

I have grown Fastolf, Red Antwerp, Northumberland Fillbasket, and Carter's Prolific, and I give the preference to the latter for growing on the free-and-easy system alluded to. It is short and robust in growth, productive, and the fruit is large and of excellent quality. For growing on tall trellises Northumberland Fillbasket is suitable; it is very vigorous and produces fine fruit. Can any growers detail their experience with McLaren's Prolific?

Canes grow well when planted in February, provided the roots are not permitted to become dry during removal and transit.—A MARKET GARDENER.

POTATO PLANTING.

I QUITE agree with "A NORTHERN GARDENER'S" advice as to preparing seed Potatoes before planting, as on that, in my opinion, rests the foundation of the crop; and, like your correspondent, I cannot advise planting so early as January.

I have had fourteen years' experience in Potato-growing on two kinds of soil—the one a heavy black soil, such as the Briar delights in; and the other a light red soil that you can work at any time. I have tried the early planting recommended by "A YOUNG AMATEUR," and have been rewarded with a half crop of the worst Potatoes I ever grew. Many of the sets remained in the same condition as when planted, only the robust sprouts had disappeared and were replaced by a few wiry sprouts which had not the strength to push through the soil. So much for early planting.

During late years I have not planted a Potato on the heavy soil until April (after the ground has been dug and manured in the autumn), when the soil was dry on the surface, then forking it over, planting as the ground was dug, in rows not less

than 2 feet 6 inches apart, being careful not to plant too deep, say 2 inches, sowing a little gas lime mixed with ashes on the sets, and covering them with the next spit, always avoiding treading on the ground except when it has been dry. After this treatment I have had a full crop of sound Potatoes. On the red land I follow the same plan, only planting deeper, and the rows a trifle nearer except for large-growing sorts.

I have used gas lime mixed with ashes, and find it a good remedy against insects.—J. H. DIXON.

THE ROYAL HORTICULTURAL SOCIETY.

KNOWING nothing about the Society, its position and perplexities, beyond what I have endeavoured to learn from reading the papers, it has occurred to me that I may venture to say something which cannot well share a worse fate than much that has been written by those who are exposed to be well acquainted with the subject in all its intricacies. In the institution with which I am connected all the principal gardening papers are taken, and opportunity is also afforded the members for reading the daily press. It is from this source, therefore, that I have derived my information, and I have read the several reports and letters which have appeared by the light of such common sense as I happen to be endowed with. As to the parties individually concerned in the Royal Horticultural Society I know nothing, and it is consequently not possible that I should have any special sympathy for the "Kensingtonians" and their friends—people whom I have never seen, and in all probability never shall see. I am neither disappointed in anything that has occurred during the past nor prejudiced in regard to any contingency of the future, and possibly on that account I can regard matters the more calmly than at least some can who have written on the subject, and who are to a certain extent identified with some particular "policy" that has from time to time been mooted. I am not committed to any "plan," and no man or "party" has any claim to my support. In a word I am independent, and will look at the position from that standpoint. I am a gardener earnestly desirous of seeing horticulture flourish and the Royal Horticultural Society healthy and prosperous. That is my desire, as it is that of hundreds of others in a similar position with myself.

In reference to the Society, if one thing more than another has been impressed on my mind it is that the present Council are earnest in their desire to promote the art which the Society they represent was established to foster. I have gathered this from the writings of many men, and from, I think, every section of the gardening press—that the Council is composed of earnest practical men, whose one great object is to promote horticulture and render the Society, in fact as well as in name, a real horticultural Society. That appears to have been generally admitted, and the shows and meetings, as reported, have been much more successful since the present men were at the head of affairs than before they were appointed to their honourable yet onerous office. The work done at Chiswick has also been eminently useful and instructive.

If I appreciate the position rightly, I am also under the impression that the Council were not only willing but anxious to disassociate the Society from the "fashionable lounge" at South Kensington, so that they might be at liberty to better carry out purely horticultural work. If I am correct in my recollection they made proposals to and obtained a hearing from the Royal Commissioners towards the carrying-out of this object—an object which would have been effected but for the decision of the debenture-holders. I do not blame this important body for defending their own interests, but simply record the fact as one which cannot be overlooked in considering the present position of the Society. As I understand the matter, the action of the debenture-holders placed the Council in this position—that be they ever so earnest in their desire to out themselves (the Society) adrift from South Kensington, they are absolutely powerless to do so for a period of at least two years. That I conceive is an important fact to be remembered. Let us, then, admit that the debenture-holders and the Court of Chancery compel the Council to retain the gardens at South Kensington for a certain period, and what next?

Two courses are now open for adoption: first, the practical closing of the gardens—letting them go to ruin—and ostracising the local residents; rejecting the support which many have given, and it is presumed many are willing to give again; powerfully aiding to place the Society in a solvent state, enabling it as far as possible to prosecute its legitimate functions.

That is one course. The next is to close the gardens and leave "bag and baggage;" disregarding the local Fellows, rejecting their aid, and depending on the purely (the country) horticulturalists for support. That policy has a fine, a plausible, a patriotic sound with it, but if examined closely is it not a deceptive sound? It has been announced that a large number of horticulturalists are ready to come forward, but mark the conditions—provided the Society leaves Kensington. Now, as it appears to me, comes the vital point. The Council cannot by the action of the debenture-holders relinquish the South Kensington connection, and because they cannot do what is impossible horticulturalists, as a national body, refuse their support. That is one dilemma. The other is this—that the gardens are an integral part of the Society for say two years; the country horticulturalists refuse to give adequate support, and, as it seems, to prevent the Society lapsing into bankruptcy—instead of closing the gardens and rejecting the only means of existence for the time being—the Council prefer to make the gardens in some degree attractive and command that support which can alone preserve the Society in a solvent state, preserving it until better days dawn and until it can depart in peace to perform the real work which both the Council and horticulturalists so earnestly desire.

Because the Council have so determined—averting bankruptcy and saving the Society—a furious howl is raised, vapouring fulminations are launched by disappointed men, and feeble arguments are advanced in favour of the "perish-the-Society" policy, and the Council are pronounced as traitors by those who know not what they say. The charge is ridiculous. Every member of the Council is a stranger to me, but my common sense tells me that they are gentlemen of honour and character or they never would have been appointed. But why not let the Society merge into bankruptcy and then start afresh? some may ask. It is very easy for the "askers," but how about the Council? In case of a breakdown would not all the odium rest on the members of the Council? and would not those who write screaming letters to the papers about the dignity of horticulture be the first to point the finger of scorn at them?

I have never written a line about the Society before, and should not have done so now had I not read in a Saturday's paper a wild tirade from a gardener whose reckless statements are a libel on the common sense of the craft to which he belongs. That writer shall not, at any rate without one protest, assume to represent a body who can work as well and think as clearly if they cannot talk and write as glibly as he can. A paragraph has lately been going the rounds of the papers describing an extraordinary phenomenon of a sea serpent wrapping its coils round a whale and dragging it into the mud. I was forcibly reminded of that ludicrous circumstance on reading the burst bubble on Saturday last, and to which the Editors from a sense of self-respect felt bound in a great measure to refuse their sanction.

The right—the seemly—way as it appears to me, is to wait and give the Council a hearing, and then, and not till then, to pronounce a verdict on the evidence then adduced. One-sided judgment is unfair, unmanly, and unjust.—A NORTHERN GARDENER.

OLD-FASHIONED ROSES.

WHEN I wrote the article on climbing Roses which appeared on page 41 I had not the remotest idea that the old Roses therein mentioned could have commanded the attention which has been evoked respecting them.

Letters have been sent to me (through the Editors) from various parts of the country—aristocratic letters, clerical letters, and letters from villa residents, and even from artisans. I should like to give extracts from some of these letters, but fear they would occupy too much space, and besides the testimony they contain is not really required, seeing that the value of the old Roses named has not been controverted save by one writer, and him a "Saveg" whom I can deal with without supporting aid.

The purport of the letters was a desire to know where the old climbers could be obtained, or if cuttings of my proclivous Roses could be sold or given. Had I received but one or two letters I might have replied to them privately, but under the present circumstances I can only treat all alike by here saying that, after having well considered the subject, I do not feel warranted in asking permission to post cuttings of Roses (which are not my property) to different parts of the country.

I fear that that reply may be disappointing to some, but there is no reason that it should be so.

In the first place, I should not be (in the end) doing a kindness to the applicants by sending them cuttings, because at this season of the year Rose cuttings will not grow; and in the next place, to wait until they would grow would be a sacrifice of valuable time before their self-raised Roses were in a strong flowering state. Rose cuttings I find grow well when inserted in a shaded border during August or early in September, but are some time before they are large enough to cover a trellis or bower. Were I requiring a plant or plants of any of the old-fashioned climbers I should purchase them at the nearest nursery. Strong flowering plants may be purchased for 1s. 6d. each much superior to those ordinarily raised from cuttings in a private way. If my correspondents will adopt that plan I am certain that they will be much better satisfied than if I sent them cuttings which would probably die. Almost every Rose-growing nurseryman can supply all the sorts of "old-fashioned climbing Roses."

And now to the Rev. Savage, for he tells us that he is a parson. He submits a list of climbers for a church without attaching any conditions. The climbers named as being suitable (and I grant beautiful) for his territory are of no use whatever for hundreds of gardens where the Journal reaches. The Roses which I named will grow anywhere and produce such a bountiful profusion of blooms as to make "Cloth of Gold" ashamed of itself. The Roses of "WILD SAVAGE" will only grow in favoured places; in the "anywhere" places they will not grow at all. With such Roses as I named and "WILD SAVAGE" quotes on page 77 I am told that my walls are destitute of blooms for ten months in the year; but were I to plant only those which he has substituted the walls would be destitute of Roses for twelve months. I have planted every Rose named by "WILD SAVAGE" except Chesnut Hybrid, but only one blooms at all well—Maréchal Niel, the remainder being either dead or as much out of place as a savage would be tomahawking in a place of worship. If the "WILD SAVAGE" resides "where every prospect pleases," &c., he must not suppose that all men are so happily situated. The climbers named by him are an excellent selection for the tropics of England, but for the chilling eastern and the biting northern districts they are "no use at all at all."

The Roses which I named, and for the purposes and positions for which I recommended them, are incomparable. Their value lies in their hardiness and their accommodating habits. They will live and bloom and luxuriate where the Savage's tender pets would shrivel and die. I conclude by saying, Grow the pets by all means and nurture them for their delicate beauty, but do not forget the "old climbers" which flourish in spite of heat, or cold, or drought, or wet, or shows, or societies, or sheep, or savages.

I should like to see "WILD SAVAGE'S" church, and especially the parson. We are both of us, however, I think too much prejudiced to judge justly of each other's Roses; but lest he should think that I am afraid of his competition I will undertake to cut next summer more blooms from one tree of Amadis and send them to the Editors of the Rose journal (if their office will hold them) than "WILD SAVAGE" can cut from every tree on his church.—A PARSON'S GARDENER.

BARBAROSSA GRAPE.

"J. W." (page 53) asks for information about this Grape, and I very willingly give him my opinion of it. I consider it to be a very excellent late Grape, and is not so much grown as it deserves to be. Those who often fill whole houses with Lady Down's and Alicante make a mistake in not planting Barbarossa as the principal sort. It may be described as a very robust grower, producing bunches as a rule double the size of any other variety. The flavour is excellent when the fruit is thoroughly ripened, and it keeps plump and fresh until March. The berries are thin-skinned. They do not become tough like some others, nor do they lose their flavour or size through hanging long on the Vine. The bunches generally weigh from 3 to 8 lbs. Some consider the latter size too large for the table, but if necessary one big bunch can be made into two or three little bunches by cutting off the handsome shouldere.

I have never had the slightest difficulty in growing this Grape to the best advantage, the bunches having always been produced in abundance, and the berries have never failed to finish well. I am never later than the 1st of March in starting

the Vines into growth, and from then until the end of September Barbarossa has plenty of time to ripen its fruit and thoroughly mature the wood, which is an important matter. My advice to "J. W." and all others planting late Grapes is to plant Barbarossa by all means, not as a "single cane at the end of the house," but as the "main crop."—VITIS.

As information is sought on the above Grape I desire to say that six years ago I made a small addition to the late vineery. A Barbarossa and Muscat of Alexandria were planted in a good border, and the former grew so vigorously that the second year after planting I trained two more shoots from it, and gave it three rafters of the house to fill. The third year two bunches were cut from the Vine, the fourth year six, the fifth twelve, the sixth fifteen, and the heaviest bunch was 7 lbs. weight, the lightest 2 lbs.

The Vine has been cut well back, and is not at the top of the house as yet. In my opinion it is a Vine that must make plenty of wood to do well, and I intend to train it on the long-rod system. The leaves are large and downy; bunches very large and rather loose; berries somewhat oval, black, and juicy; in flavour not equal to the Black Hamburg, but it is a good late-keeping Grape, indeed one of the best. The bunches have a noble appearance on the table, and have been much admired.—F. FETCH, *Gardener, Whitfield Hall.*

THE COMMON LILAC WHITE BY FORCING.

PERHAPS there is no other flower so deliciously fragrant during midwinter or early spring as the Lilac when forced in darkness; and as it is so easily attainable, and within the reach of all who are in possession of a Mushroom-house or heated shed, or, indeed, a stovehole where light can be excluded, we have often wondered why those who appreciate sweet-scented flowers should not have extended their practice more generally than is the case to this method of Lilac forcing.

It is true that when plants are subjected to a high temperature in a dark house or shed they are afterwards useless, but we feel certain that the yield in beautiful flowers will treble compensate for the original value of the plants. Lilac flowers produced in this way are held in such high esteem with us that we have had a little house specially fitted up for the purpose, so that we have little difficulty at any time, with two or three weeks' notice, in obtaining a basketful of these truly beautiful snow-white flowers, two or three sprays of which will perfume the whole air of a room for days. Our house is merely an old shed with a closely hatched roof; but we have taken care to have efficient heating power, so that, if necessity requires it, we can raise the temperature to 100° in a very short time. Such accommodation is of course ample; indeed it is special, and is not absolutely necessary, though it reduces trouble to a minimum, and is cheapest in the end. We have managed to effect the same purpose by partitioning-off heated structures in out-of-the-way corners with success, varying according to circumstances connected with the atmospheric conditions of the houses in which the forcing was being carried out. Our practice is as follows: In the autumn we examine our shrubby borders, and endeavour, as far as possible, to select the requisite number of plants from places where overcrowding is most apparent, and where a thinning-out is most likely to do good, choosing bushes which are conspicuous for prominent well-developed buds, which must be partially cut round some time previous to being lifted in order to prepare them for early work. It must be borne in mind that unless the buds are bold and prominent, and the flowers present in embryo, any attempt at forcing will be futile. We have tried young plants from the nursery more than once, but have always failed. Young trees seem to lack stored-up vitality or stamina to undergo such an ordeal of forcing in the absence of light, and disappointment will be the only result that can be expected from such a selection. To our mind nothing can go further to exemplify—if exemplification is needed—the quantity or power of stored-up nutriment in deciduous trees, than to see one of those glorious bushes literally covered with wreath after wreath of flower, without any indication of growth in the shape of young shoots and leaves; for if forcing be conducted slow enough to allow of young shoots being pushed, or even simultaneous action of leaf and flower, the latter will be little worth. It will thus be seen that success lies in rapidity of action, provided also that the material in hand be in all respects suitable for such forcing.

As the season advances, the progress of advancing vegeta-

tion renders forcing less risky. From this date (January 3) a fortnight or three weeks at the most will be sufficient time to allow from the time the plants are introduced into heat till the flowers are ready for cutting. The syringe may be freely used at first, and heat gradually applied according to the progress made, but a dry atmosphere must be maintained as the flowers expand or they will damp-off in a few hours, and when damping-off sets in, no treatment seems powerful enough to counteract the evil.

We have a nursery of the variety known as Charles the Tenth, in an open favourable situation, and from which all suckers are removed as they appear during the summer, and they are lifted annually so as to prepare them for this system of forcing. When we think these young trees are well up to the mark for forcing, we anticipate results in proportion—perhaps in excess of our labour. An error too commonly made is to mistake the Persian Lilac for the old common one; but the Persian will not submit to forcing in darkness.—W. HEND (in *The Gardener*).

A GOOD OLD ROSE.

I KNOW of one Rose, and only one Rose, that will answer all the requirements of the description of your correspondent Mr. Edward Luckhurst, and that is Gloire de Dijon, without doubt the best Rose for all purposes that exists. I know of no other that will approach it. Only obtain a crimson Gloire de Dijon, and in my opinion you will have attained perfection. I did not answer to the Rose election, but why the "Gloire," the old Rose, was left out in the cold at the last is beyond my comprehension. The best of the others fails and pales by comparison with my old friend. This last season I have had blooms from April to January, and to-day (February 4th) I picked from the front of my house (aspect due south) a full-blown Gloire de Dijon that would not disgrace the flowery month of May.

I yesterday gathered a Camellia grown in the open air, without its having had any protection whatever in the shape of glass shades, matting, roof-shelter, &c.—A SUBSCRIBER, *Gosport.*

AURICULAS ATTACKED BY WOOLLY APHIS.

I ASK the experience of your readers on the following point. My collection of Auriculas has apparently wintered well, and now with healthy hearts the plants are beginning to show signs of a start, so I have taken a few in hand for the commencement of top-dressing, but the first disturbance of the soil has revealed an unexpected enemy.

The roots are abundant, and as usual spread and lace themselves vigorously on the interior surface of the pots; but here, against the crocks, they are attacked by colonies of what appears to be, or at least superficially resembles, the white woolly aphis of the Apple, commonly called the American Apple blight. The insects are numerous, small, sluggish, and surrounded by a white woolly substance, and though I cannot detect that they have yet done my plants any injury, I am nervously jealous of their presence. Three or four years ago the Apple aphis attacked my Apple trees, but one application of Gishurst compound with a scrubbing brush abolished him. Can it have gone from Apple boughs to Auricula roots? and if so, would Gishurst hurt the tender roots, which ought now to be ready for the spring time to call upon their vigour?

Yesterday on detecting the enemy I applied some soft soap and water, which has put him to flight, and to-day there is no trace of the pest in the pots so treated; and I think of trying the Gishurst well diluted, but shall be glad to hear the opinion of others on the enemy and remedy, for I fear my whole collection is likely to be more or less affected, and I am ignorant of the extent of the danger to which I am exposed.—JOHN T. D. LLEWELYN.

[I would counsel your correspondent, who reports the existence of woolly aphis in the soil and crockwork of his Auricula pots, to spare no pains to destroy what is sure to prove an enemy. It will not long confine itself to its present position, but will proceed to attack the strong roots and fibres of the plants, on which these mealy insects fatten fast, and along which they will spread under cover of their peculiar woolly-looking shelter.

With this nasty insect among Auriculas I have myself had no experience, and but short acquaintance. Until last year, when I saw it in two collections, I did not know it would infest these plants, and but for your correspondent's letter I should

not be able now to say more about this thing than I was a few months since in the course of some notes on *Auricula* culture in the pages of the "Florist and Pomologist." Mr. Llewelyn's information upon woolly aphis is the latest that has reached me, and it is of value.

On first noticing this insect among *Auricula* roots, and intuitively, of course, for an enemy, I could do no more than suggest a cause and a cure. For the cause, that perhaps some leaf soil or soil from the neighbourhood of infested trees has been used; and Mr. Llewelyn states that he has had this mealy bug among his Apple trees. As the creature is clearly able to exist either above or under ground, and to either live on leaves or feed on fibres, it may have got into communication with the *Auricula* through the soil direct or by emigrating from infested trees.

As for the cure, there can be but one, and that—extermination; and I had suggested turning the plants out of the soil and washing them, root, and stem, and leaf, in a solution of soft soap and water. Mr. Llewelyn states that he has applied this, but simply as a watering upon the soil, and it is even thus successful. If I say I am glad to be thus far confirmed in what I thought would be best to do, your correspondent will not think that I only mean "Sweet are the uses of (another man's) adversity."

The question is asked whether Gishurst compound, which is found very effective against woolly aphis on Apple trees, might not be used for ridding *Auricula*s of the same pest. For two reasons I would answer, No. 1st, Because I do not exactly know what the celebrated compound is made of, and I would never try a general experiment with mysterious condiments upon valuable plant life. 2ndly, Because the cheap and homely, simple and invigorating solution of soft soap is enough.

For Mr. Llewelyn's affected plants I would not recommend less than I should do myself for my own were they in a similar case. I should not, then, be content with watering the soil with soft-soap solution, fearing that that woolly wrapper may be only too good a preservative of embryo, if not of perfect, insect life. I should be content with nothing short of fullest measure. I would wash in the soap solution the roots and stem, and indeed the whole of an infested plant. I would altogether burn the infested compost, and I would replot the diseased plants at once in a compost gathered far from tainted sources. I would have the frames cleaned thoroughly, and the pots purified in scalding water, and with fresh ashes and tile laths for the plants to stand on. I would leave nothing about them wherein the mealy pest could lie concealed in any stage of life. I have a lively horror of this insect, and such dread of any nearer and dearer acquaintance with it that I jealously examine every strange plant that may come to me from collections with which I am not very familiar.

It is, of course, a pity to have to disturb well-established plants now; but the roots are beginning to be very active again, and there is no great increase of foliage yet to be distressed. It seems to me a lesser evil than allowing the spread of this loathsome pest upon the roots.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

CLIVE HOUSE SEEDLING GRAPE (SO CALLED).

That which I requested you to insert in the *Journal of Horticulture* regarding this Grape I reiterate without fear, having no interest to serve but what I previously stated. For somewhat more than forty years I have been in the habit of paying a visit to the gardens at Alnwick Castle more than once every season, and by the different gardeners employed there during that time I have had every facility afforded me for seeing all that was considered worthy of notice. I distinctly remember having the seedling Grapes (of which that in question is one) pointed out to me. I afterwards frequently examined them, and when they began producing fruit had much pleasure in tasting and comparing it with that of older Vines. Not, so far as I remember, have I ever heard the Grape called by any other name than "Caseley's Seedlings," and that not only during the last summer, as Mr. Bell asserts, but for many years previously.

Having, as I consider, said quite enough about this affair, I now take leave of it.—ROBERT BOWIE, *The Gardens, Chillingham Castle.*

I SHOULD not have taken the least notice of the above had my name not been dragged in amongst other mis-statements of Mr. Bell in the *Journal*. I can only say that I corroborate

every word that my friend Mr. Bowie says about this Grape in your issue of the 18th, who knew the Grape for years before I ever saw it. If seedling Vines had ever been brought to this place they were never seen or heard of by anyone here as far back as I can trace. I have ample proofs that the Grape was raised by Mr. Wm. Caseley in this garden some twenty years ago, and it has been grown and fruited here ever since. How it can now turn out to be a new Grape and a Clive House Seedling are problems I leave the horticultural public to solve.

The other Grape alluded to by Mr. Bell as not securing the same honours that his adopted child did from the Fruit Committee of the Royal Horticultural Society, was simply because it was thought by some of the Committee that the flavour came too near the Muscat flavour of that excellent Grape Mrs. Pince to be distinct.—ALEX. INGRAM, *The Gardens, Alnwick Castle.*

[No more need be published on this subject.—Eds.]

WEST'S PATENT ADJUSTABLE TRELLIS.

This trellis was exhibited before the Fruit Committee of the Royal Horticultural Society on June 8th, 1876, by Mr. W. McGrath Compton, *Hibernia Wharf, London Bridge*, and was considered to be an ingenious contrivance and worthy of trial by those cultivating Vines and Cucumbers.

The patentees submit that "by the use of this trellis such portions of a Vine or its produce as are inconveniently placed are rendered moveable, so as to be brought within easy reach

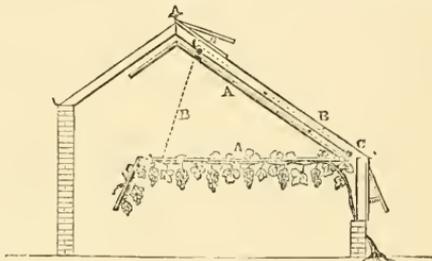


Fig. 13.



Fig. 14.

for the various purposes of thinning and cleansing, gathering the produce, or any other object for which facility of access is desirable. The trellis can be moved gently to any suitable position. It is adapted for training creepers, &c., in the conservatory and on the walls of dwelling houses, and can be readily put up or taken down, and affords every facility for cleaning or painting the sashes or wall against which the trellis may be placed. The lowering of the trellis cannot in any way injure the stem of the Vine if trained as in the drawing, the deflection being very slight. The trellis may be constructed of either iron or wood. When made of the former, which is preferable in many respects, it combines lightness of appearance with strength and durability, and can be fitted to any shaped house. Vines covering a lineal space of 60 or more feet may be lowered singly or together by turning one handle. In the drawings, A A shows the trellis in position and lowered; B B the chains for lowering and raising; and C C the drums and pulleys round which the chains work. D D shows the form and construction of the trellis. The cost of the trellis is inconsiderable, not exceeding 3s. 6d. per foot, including all fixtures. It varies according to the build of the house in which it may be fixed; but when compared with the trouble saved and advantages gained by its use, the outlay appears insignificant."

SOUVENIR DU CONGRÈS PEAR.

AUTUMN Pears are so plentiful and generally so good that a new variety must possess special merit to command approval. The Pear mentioned is, I believe, a comparatively new variety,

yet sufficiently old to have proved its worth. I planted a tree of it in 1872, and since it has borne fruit of such splendid appearance and of such superior quality I cannot help regretting that I did not plant two trees instead of one. I do not assert that it surpasses Williams' Bon Chrétien in flavour, because I believe that good old Pear when in its best condition is unsurpassable; but Souvenir du Congrès is equal to the favourite variety named, and is somewhat larger than it. I find the new Pear, therefore, equalling the old variety in one quality and surpassing it in another. The new also conveniently succeeds the old in the period of ripening. Souvenir du Congrès ripens more slowly and keeps longer than Williams' Bon Chrétien, and the popular name—"Late Williams"—that is being applied to the new Pear is, I think, appropriate.—**A FRUIT-GROWER.**

EXHIBITION PANSIES.

As planting time will soon be here, and as the improvement of this, at one time, favourite flower has been very rapid of late, a few words upon the subject may be not unacceptable to your readers, more especially as so little is said in horticultural journals of the cultivation and exhibition of this modest flower. It has often occurred to me that in the race after Roses too little attention may be paid to other less pretentious but still beautiful flowers, and it were well if some "WYLD SAVAGE" would leave the woods and champion less fashionable kinds.

The Pansy in particular has suffered from neglect, and in many—very many—schedules its name is not to be found. Why this should be so I do not know; but so it is. Our canny friends "o'er the border," however, show no such indifference, and their National Pansy Society, judging by the vitality shown every year, will long keep alive the interest in the old "Heartsease."

Then, again, a strong prejudice exists amongst English florists against the fancy Pansy, or so-called Belgian varieties; and in some cases the florists carry it to an absurd length. I had a narrow escape of disqualification at the Nottingham and Midland Counties Show last year because my pan contained some of the "irregulars;" but a reference to the schedule satisfied the judges, and I took first from twelve competitors who had confined their selections to the orthodox white and yellow grounds and selfs. To restrict an exhibitor to "show" flowers is to rob the pan of that distinctness which should appear in every collection; but I am pleased to say this prejudice is not so deeply rooted as it once was, and in many catalogues of florists' flowers "fancies" are now included, and this result has been brought about by the most legitimate of all means—the surpassing beauty of the blooms themselves. No one, however strongly wedded to the old school, could long resist the claims of a flower like Leith Walk Hero, sent out last year by Messrs. Dickson & Co. of Edinburgh, with its solid violet-purple blotches, edged with carmine on all the petals; and a well-defined creamy white margin round each blotch; or of William Melville, sent out at the same time by Messrs. Downie and Laird, also of the Scottish capital, its back petals being of rosy purple with fine dark blotch, and edged all round with yellow. Than the two named none could look more beautiful or distinct; but I could mention many others of high merit, such as George Wood, the Hon. Mrs. Beaton, John Currie, Mrs. Crawley (a dark rosy flon, edged all round with a clear margin of pure white), Bonnie Fishwife (maroon, soft violet-purple blotch, solid yellow eye, white brow, and primrose margin), Queen of Yellows, Isa Hampton, Katie Elliott, Miss Murray (rich carmine, violet-purple blotch, deep yellow eye, white brow, and pale yellow edge), Adonis, and Hector (heavy blotch of bright purple on the three under petals, with pure white lacing, and upper petals edged and streaked with rosy purple). The whole of the above were sent out in 1876, and besides being distinct fully reach the standard as regards form and substance. Because they are new I do not praise them, nor do I praise them at the expense of the older sorts, some of which will long retain their places in select collections. Of these Kirbie, Miss McNutt, Wonder, David Smith, J. B. Downie, Mrs. Neilson, George Vair, William Baird, P. W. Fairgreive, Rev. H. H. Dombain, Thos. Grainger, Colonel Wedderburn, David Dickson, Gretchen Redraes, Duke of Edinburgh, Gaiety, and W. F. Gunn are well worth growing, and would form a choice collection in conjunction with the new varieties enumerated.

Thus far I have only written of fancies, and, fearing I have

already occupied as much of your space as you can spare, shall reserve my remarks upon show Pansies for another article.—**M. H. MILLER, Leek.**

A COLLECTION OF SELECT FRUITS FOR A SMALL GARDEN.

I HAVE lately been asked to make out a list of fruits for several amateurs; and as it appears that information of this kind is wanted before the planting season closes I send the following list of what I selected some years ago privately for a reader of the Journal, who has since told me they have given great satisfaction.

Grapes.—Early: Black Hamburg and Buckland Sweet-water. Late: Lady Downe's Seedling and Barbarossa.

Peaches.—For succession: Early York, Royal George, Nobleesse, and Walburton Admirable.

Nectarines.—Elruge and Violette Hâtive.

Apricots.—Oullins Early and Moorpark.

Figs.—Brown Turkey and White Marseilles.

Plums.—Green Gage, Kirke's, Coe's Golden Drop, Goliath, Victoria and Dmsion.

Apples.—Kerry Pippin, Keswick Codlin, Lord Suffield, Blenheim Pippin, Hawthornden, Bess Pool, and Golden Harvey.

Pears.—Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, Glou Morcean, Winter Nelis, and Beurré de Rance.

Cherries.—Royal Duke, May Duke, and Morello. *Strawberries*.—Keens' Seedling, Vicomtesse Héricart de Thury, Elton, and Dr. Hogg.

Raspberries.—Carter's Prolific and Fastolf.

Gooseberries.—Ironmonger, Red Warrington, Early Sulphur, Hedgehog, Keepsake, and Thumper.

Currants.—Red: Ruby Castle and Red Dutch. Black: Black Naples. White: White Dutch.

The above is very brief: so much the better. It is a great mistake to plant too many varieties of fruits about a small garden. If any of your correspondents should feel inclined to criticise the above let them substitute sorts for those named, with their advantages, and not add to them.—**PRACTITIONER.**

CHISWICK.

THE ROYAL HORTICULTURAL SOCIETY'S GARDEN.

"WHAT'S going on at Chiswick?" is a query frequently addressed to those who are supposed to be able to answer it. There can be no doubt whatever that the "old place" possesses a sort of evergreen interest for most people who are connected with horticultural pursuits, and "What's going on at Chiswick?" becomes therefore a very natural question.

The attention directed to Chiswick is not wholly founded on old associations, old experiments, old triumphs. There is a lingering power about these it is true, but the work of the present absorbs more of public attention than the history of the past. Than the work of the past few years no "Chiswick doings" have been more really useful. The vegetable trials have afforded instruction to all—sound reliable instruction both as regards the nomenclature and qualities of the stocks submitted for trial. That, however, belongs to the past, the very immediate past, and "What's going on now?" is the primary question with many.

Well, the work now, that is since the beginning of the year, has not much of the picturesque about it, nor is it—in one sense at least—particularly profitable. Pumping water out of stoke-holes is not very scientific employment, but such work has been a prime necessity of late in order that the other work could progress satisfactorily. On account of the inclement season much outdoor work, as is the case in many other gardens, is more or less in arrears. It has been until very lately impossible to proceed with digging, &c., and some pruning remains to be done. Yet many of the trees are pruned at Chiswick, and fine examples several of them are. The pyramid Pears, for instance, afford a lesson in management worthy of being followed. Many of these trees are about 15 feet high and from 4 to 5 feet in diameter at the base, yet so open are the branches placed, and so strong are they withal, that a man might pass between them and climb to the tops of the trees without breaking the main branches. They are now subjected to the closest of close pruning, but are not pigmy trees; on the contrary, they are stout timber trees bristling with spurs. The collection of Plums is a large one, handsome

young specimens which are each year laden with blossom, which is, however, generally destroyed by frost, the situation not being suited to Plums. Apples as a rule grow too strongly in the clayey soil of Chiswick, and in such soil the less pruning the better, perhaps, where a maximum amount of fruit is required. One more instance that a hard-and-fast rule for pruning cannot be laid down as the "best" for all situations.

A fine wall of diagonal-cordon Peaches is worthy of notice. A great number of varieties are planted, the main branches being trained 2 feet apart. The trees are not managed on the close-pinching short-spur system, but the wall space between the main branches is sufficient for the laying-in of young wood from the upper surfaces of the mains—a quick mode of covering a wall with trees easily managed and in a state capable of bearing superior fruit. There are vertical cordons of Cherries, Apricots, and Plums managed on the spur system, and in an admirable bearing state, also a collection of Vines on one of the walls; the best sorts for that mode of culture being the Eperons (Espiran) and Royal Muscadine.

In the glass department, which is extensive, work is well forward. The orchard house is highly promising, the two rows of standard Peach and Nectarine trees being in splendid condition. The branches are thinly disposed and are extremely fruitful, the blossom buds swelling rapidly. The borders in which the trees are growing are never dug—not even pointed-up with the fork; they are about as hard as a gravel walk, and are heavily dressed with manure during the growing season, which induces a network of fibrous roots—the sequel of fruitful branches. Potted trees are similarly promising, some of them just expanding their blossoms; even amongst trees packed in fern in the open air are one or two Apricots fully in flower, suggestive of the earliness of the season and what may justly be termed its dangerous character in reference to the fruit crops.

In the vinerias the canes are at rest. At Chiswick fuel is economised, the Vines being grown almost entirely with sun heat. The collection of Grapes is the most extensive in the kingdom. It is not necessary to dwell on the varieties, but as information has been sought on Black Barbarossa (Gros Guillaume) it may be stated that it is one of the freest bearing and finest Grapes in the collection.

In the large vinery, a noble structure, Camellias, Rhododendrons, &c., are arranged. These plants are not half so large as they were a few years ago, but are infinitely better, being well furnished, healthy, and well set with buds. Their present condition is mainly due to severe pruning. Camellias and Rhododendrons may be cut as severely as Pelargoniums, and, like them, are the better for it; the shrubs mentioned "break" out of the old wood as freely as does a Thorn hedge after it has been "plashed" or "scotched."

Flowering and other decorative plants are also plentifully represented—some just unfolding their flowers, others being grown for experimental purposes. Amongst the latter may be instanced Epacris, a collection of which the Council are establishing, and of which something useful will be said in due time. The flowering plants include Lillaes, Azaleas, Prunus sinensis, Coronillas, Primulas, Echeveria retusa, &c., and as particularly noticeable Lily of the Valley. The Lily crowns are grown at Chiswick, and it is not possible to imagine that imported "clumps" can excel them. The system of preparing them is to afford an open position, plenty of room, rich soil, and heavy mulchings of manure. By this plan small tufts become in three years bold flowering crowns, which are dug up and packed in cocoa-nut fibre in a heated place, and almost every crown produces a vigorous spike of flowers.

In one of the pits are a few Orchids, also Ferns. Amongst the latter *Pteris acrostichata* major is distinct and fine; it is of easy growth, and very valuable for decorative purposes. *Nephrolepis davallioides* furcata, lately sent by the Messrs. Veitch, is also attractive by its glossy and gracefully arching fronds. Noticeable in the stove, which is mainly occupied with Palms and other ornamental-foliaged plants, are two fine baskets of *Torenia asiatica*. This is a good old plant, and that is the proper way to grow it and show it to advantage. Many of the decorative plants at Chiswick will probably be removed to the conservatory at South Kensington to aid in making attractive the meeting which is announced to be held next week: where the plants now are few can enjoy them.

Let South Kensington be what it may, one thing is clear—that any society possessing Chiswick, its ten acres of ground, its extensive ranges of glass, its great collection of fruits, its multitude of plants, its facilities for experimental purposes,

and (although he will not thank me for saying so) its able superintendent, has a rich horticultural store, and an immense advantage over any "new society" which a few good people "see in their dreams."

Much has gone on during the past, is going on at the present, and in all probability will go on in the future—"at Chiswick."—J. W.

KITCHEN-GARDEN NOTES.

WITH February begins the busy season in the kitchen garden. Up to this time unfavourable weather hinders many from doing much in this department, and this may be the case without any severe loss following; but let the weather be what it may, an exertion must be made now or many crops will be so behind that no amount of after-attention or hard work will remedy.

Before putting in any crop the ground must be well prepared. This is of great importance, and no half-done work should ever be allowed. Where the subsoil is cold and clayey too much of it must not be turned up in one season. Some crops of a rough-growing description might thrive in it, but small seeds and plants will perish or fail to come to perfection. Soil that is turned up stiff in trenching I always make a rule of planting with Potatoes the first season, and when properly manured any crop will grow on it afterwards. One of the best manures for a newly-exposed stiff soil I find to be decayed leaves, to be followed with something of a more lasting nature the following season. All ground for vegetables should always be turned over and left quite rough at first. Some make it smooth on the surface with the spade, because it will soon be planted. This is a mistake. Ground treated in this manner becomes quite bound on the surface after the first heavy shower, and the non-rising influence of the atmosphere has no further power. When left rough even for a day or two and then broken up with a fork the result is quite the opposite.

All kinds of Cabbage, Kale, Cauliflower, &c., grow best in a rich soil, but there is a possibility of making it too rich, not only for the crops named, but also for such as Onions and Celery. Too much manure makes them large enough, but they want substance; on the other hand, too little manure is the cause of their being tough and dry, and very often small. The plan I find most satisfactory is to give a moderate dressing of manure annually. Excepting in such cases as mentioned above leaves should never be used alone as manure, but mixed with decayed cow dung or stable litter they are excellent for all crops. In most small gardens the ground will be all cleared by this time. Any Kale or Broccoli remaining should be lifted and laid-in in some odd corner.

Before putting in any crops write labels for every kind of vegetable that is to be planted, and then go over the garden from one end to the other and place a label in wherever its crop is to occupy. This I was taught when "serving my time" with one of the "old school," and have practised since with a saving of much confusion.

Rotation of crops is by some considered indispensable, but it is not absolutely necessary to insure success. The following is something like the way I try to work-in my crops:—Celery in the strongest soil in the garden. This is thoroughly manured with the best "muck" obtainable. When the Celery is cleared off the ground is turned over, without adding much manure, and here the Onions are sown. Cauliflowers succeed these occasionally, but when the Onions can be harvested early enough the ground is manured and turned over at once and filled with autumn-sown Cabbage plants. These I always like to follow with Potatoes, and Potatoes with deep-rooting crops, such as Carrots, Beet, and Parsnips. Potatoes open the ground for these crops, and they do not harbour so much vermin in the soil as many others. Broccoli requires an open but rich soil, and it need not be planted in the lightest situation. Brussels Sprouts thrive under the same conditions. Rhubarb I always plant in the most shaded situation. It does not become quite so fine here as in a fully exposed place, but it does better in the shade than most other crops.

Excepting what is forced under glass, I do not advise putting any kind of seeds into the ground until the first or second week in March, and unless the weather is favourable and the soil in good condition nothing is lost by waiting a week or two longer. I have sown Peas in February and again at the end of March, and the latter were ready for use quite as early as the former. Where the garden is large enough to admit of it, or rather where there is a sunny south border, all early

vegetables, such as Cauliflowers, Horn Carrots, Turnips, &c., should be sown in small quantities here until those in the main quarters come in.—A KITCHEN GARDENER.

TOOTHED CLUB MOSS—*LYCOPodium DENTICULATUM*.

OUR Club Mosses are a race of plants found in spongy boggy places in upland and mountainous districts; many find their way to us from other countries and have long graced our stoves, greenhouses, and exhibition tables. The *Lycopodium* are intermediate in appearance between Mosses and Ferns, and are furnished with spreading or creeping stems. We are told that the powder contained in the capsules of *Lycopodium*



Fig. 15.—*Lycopodium helveticum*.

clavatum is inflammable and has been used in fireworks. L. Selago is used in dyeing to fix colours, and is employed by some as an emetic and cathartic, but requires care in using. Linnaeus says the Swedes use a decoction of it to destroy lice on swine and other animals. *Lycopodium* are neat evergreen Moss-like plants. Many of them when once established are as troublesome as weeds, especially in moist warm places. They may be cultivated in Warden cases, pots, baskets, aquariums, and rockwork. They are increased by division and cuttings in the spring. Though moisture-loving plants they enjoy thorough drainage, and well supplying with water and pure air. A mixture of sandy loam and well-decomposed vegetable matter, with pieces of sandstone and charcoal dust, will meet their requirements. *Lycopodium helveticum*, of which we add a woodcut, is a native of Switzerland, and requires the same treatment as *L. denticulatum*.

L. denticulatum has during late years become one of the most popular of decorative plants, and is grown and sold for this

purpose by many thousands of dozens annually. For forming fresh green fringes in almost any temperature, and a close yet elegant ground-covering in conservatories and halls, it has no superior. It is a most accommodating plant, luxuriating in the high temperature of the stove and the drier cooler air of the greenhouse; while it endures better than most plants the draughty and semi-dark corridors of the mansion. For shaded rockwork under glass it is indispensable, and, as has been lately stated by Mr. Luckhurst, it will grow well in shaded places in the open air, receiving little, if any, injury from the frosts of ordinary winters. It is, in fact, a hardy sub-alpine plant, a native of Switzerland, and from whence it was introduced about a century ago. It is, however, most commonly grown as a cool stove plant, and when it is required to be increased rapidly, and plants are desired to be established quickly, a genial temperature must be afforded. When plants are prepared for decorative purposes, pots of a convenient size are filled with sandy soil, and a few sprays are placed in the centre of each pot, pressing them down with a little soil placed over the lower portions of the stems, leaving the surface of the soil rounded and rather high in the centre. Water can then be sprinkled freely over the plants, which they rejoice in; but they cannot endure stagnant soil, hence the advantage of "high potting." In all places where much plant-decoration is required, this familiar, pleasing, and tractable *Lycopod* should be largely grown.—N.

NETHERBY HALL,

THE SEAT OF SIR FREDERICK ULRIC GRAHAM, BART.

By the old highway between the two capitals there are few, if any, spots which have won so many panegyrics from travellers as that part of the vale of the Esk lying between Langholm and Longtown. To the traveller by rail, however, the greater part of this scenery is lost as the branch from Langholm diverges to the east of the vale; but to those to whom time is not a special consideration the balance of beauty lies decidedly on the side of the old coach road, a consideration which induced me when paying a visit lately to my friend Mr. Kerr, gardener at Netherby, to sacrifice time for pleasure; and I had certainly no cause to regard the time as mis-spent, neither do I consider that the rambling notes which I took of the scenery will be uninteresting to the readers of the Journal.

Langholm is a prosperous little town, well worthy of notice not only for its enterprising manufacturers and world-renowned tweeds, but also for the beauty of its surroundings, for it nestles at the feet of a circle of bold wood-fringed hills which environ it; and being situated at the point where the vales of the Esk, the Ewes, and the Wanchope meet, it forms a very pretty picture indeed. On leaving the town proofs of its prosperity are springing up on all sides in the form of chaste villas and spacious mansions. One in particular deserves special notice from gardeners—Brooklyn Cottage, the residence of Mr. Park, who, along with his brother (whose place I will notice by-and-by), after a successful career as florists in America, are spending in independence the evening of life in their native vale.

A mile or so below Langholm a substantial bridge bears the road across the river, and the view from it is very picturesque, with the town and its environs in the background, and in front the river foaming, chafing, and dashing over its rocky bed past an old distillery, the booming of whose condenser is heard above the sound of the chafing waters. The road now enters what is called the Dean Banks, and for two miles is overarched by magnificent trees. The Larches here are said to be the oldest in the south of Scotland, and judging from the few that remain giant specimens they must have been, but most of them have of late years succumbed to the woodman's axe. Many of the Spruces are a noble sight as their great dark masses tower up against the deep blue sky. Did time permit, an hour or two could be very profitably spent here among the Ferns and other plants which flourish in great abundance.

Proceeding for a mile or so through this spacious avenue you pass Broomholm on the east side of the river. It occupies a fine situation, but the mansion has been built in the olden times when comfort and convenience were not sacrificed for appearance. It has for upwards of two centuries been the residence of the Maxwells, a branch of the powerful border clan of that name, whose title to the Broomholm estates dates back from that period. They were the founders of Langholm; that part of it on the east side of the Esk stands on their

estate. A short distance above Broomholm there is a grotto upon which much labour has been bestowed. It is a rocky island, and is reached from the east side of the river by an iron bridge. It is a secluded and romantic spot surrounded by deep woods and well worth a visit. From Broomholm to Netherby "the Buccleuch" is "monarch of all you survey;" and on emerging from the avenue you come upon Irving House, the residence of his Grace's chamberlain, a mansion worthy of a Duke. The garden is close to the public road, but merits no special notice. There are some grand old trees about the mansion, highly appreciated apparently by a colony of rooks. The Esk, which here makes a graceful sweep round the grounds of Irving House, is joined by the Larras, a dark rugged mountain stream that comes tumbling down a deeply wooded glen; and high above the topmost trees are seen the arches of a magnificent viaduct traversed by railway trains in their journeys to and from Langholm. The next object that catches the eye

is a grim old Border Keep. It is the only one in the locality that has been spared, but you cannot look from that relic of antiquity to the commodious if not elegant homesteads nestling all around without exclaiming, "Say not that the former times were better than these." The road and the river which had parted company again converge, and on passing a group of cottages with the addition of a good meal mill you reach the far-famed Gilnockie bridge, and here the scenery is such that it cannot be dismissed with a casual notice.

The appearance of the river as it rounds a sharp curve above the mill and comes tumbling over horizontal beds of limestone, and chafing against the cliffs that are overhung with stately trees, with the hills, the wood, the homesteadings, and the old Peel tower in the background, form an exquisite picture. Nor is the scenery on the south side of the bridge less striking, for you look down upon a wild mass of limestone boulders through which the river sweeps in many dark eddies, while

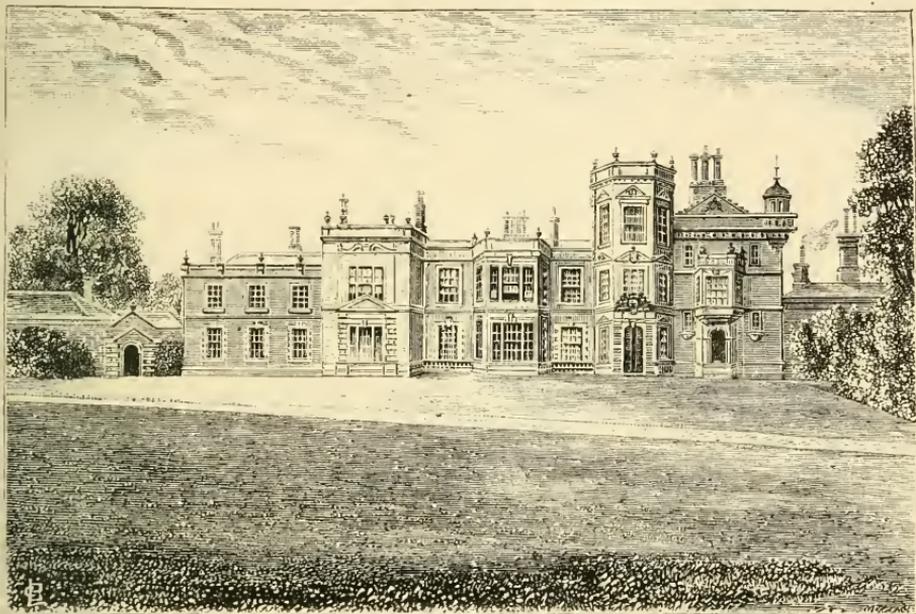


Fig. 16.—NETHERBY HALL.

among the great blocks on the precipitous western bank are the ruins of a bower erected by the Duchess of Buccleuch. But the interest does not end here, for on examining the rocks they are seen to afford a rich field for the geologist. Here are sea shells compared with which the same species in the present age are mere pigmies, along with what appear to be exotic Ferns and other plants: but here I am out of my element, being better acquainted with the living than the petrified specimens. The river here trawls below a massive stone bridge leading over a deep romantic glen called Byre Burn. On crossing the bridge the view up the river is very fine; yet beyond that there is little that merits special notice, till again the river is crossed by an old bridge of three arches springing on the east side from a red sandstone cliff. From the bridge you see before you bold overhanging cliffs of red sandstone crowned with trees, underneath which the dark sullen river is chafing. At the east side of the bridge is the entrance into the church and parsonage of Canonbie, and I suppose a spot more fertile and fair can rarely be found, justifying the cynical observation that wherever you find a comfortable house surrounded by "pastures green" you may conclude it is a parsonage. Passing the "Cross Keys" inn that in the season is monopolised by salmon fishers, you see lying to the east of you Canonbie Lee, on which in days of yore there was racing and chasing by the mounted Grahams, Fosters, Fenwicks, and

Musgraves of the Netherby clan after the lost bride of Netherby and her brave young Lochinvar. Beyond is the Liddle advancing to join the Esk. Here the streams advance and recede and advance again towards each other, till after many whimples and windings they blend into one and roll on peacefully towards the ocean.

Beyond the Liddle lies the fair domain of Notherby, and threading down the foot of a steep wooded bank is the Border Union Railway. On the top of a steep lynn is an old fort or camp, said to be Roman. It is easily approached from Riddings Junction, and is well worth a visit. The prominent object that catches the eye is a high earthwork in the form of the frustrum of a cone. From the base of it sweeps in an irregular circle a wide deep moat and earthwork, enclosing an area of three-quarters of an acre. On the south side opposite the tower, and striking out from its base, sweep an outer trench and earthwork in the form of a crescent. Beyond these there appear to have been less trenches, and also what appears to have been a canal for filling the moats. If this was the case, then part of it must have fallen over the lynn, as the moat that runs out into it has a modern look, leading to the inference that if it was made by the Romans they were not its last occupants. It stands at a point commanding the entrance into both valleys. The view from it is extremely lovely, having the dark heathery hills of Eskdale in

the background, the level, fertile, and richly-wooded plains of Cumberland sweeping out to the south, with the belt of the Solway glistening like silver through the woods in the distance, and the massive peaks of the Cumberland mountains stretching along the southern horizon. Passing the inn a pleasant road conducts you past Woodhouseless, Woodlees, and other places well worthy of notice; but a smart-looking house catches the eye. It is the property of Mr. James Park, brother to Mr. Park of Brooklyn Cottage, and here as a country gentleman he is reaping the fruits of his professional career in America, a sight that cannot fail to arouse emulation in every gardener's breast.

Here the beauty of the scenery culminates, for there, backed by deep woods, is the mansion and grounds of Netherby, a noble pile, and worthy of the noble line that for so many centuries have been its owners. Tradition traces back the origin to the family to the darkest days in England's history—the wars between the houses of Lancaster and York. It is said that in those troubled days a knight, son of the Lord of Monteith, stung by the ingratitude of the Scottish king, for whom he had braved death in many a bloody field, left him in disgust, and with several of his clan came to the English border and took up his abode in the Debateable Land. The lands of Netherby were part of the border country cursed by being part of what was known as “the Debateable Lands.” They were repeatedly laid waste by irruptions of the borderers. James I. granted the Debateable Lands to the Earl of Cumberland, who sold them to Sir Richard Graham, and the sale was confirmed by Charles I. Since the Restoration the lands have been at peace. Netherby was a Roman station, as is testified by the numerous coins and monuments which have been found there. The present mansion was chiefly built by Dr. Robert Graham, who died in 1782.

Around his old tower, the Ivy-clad ruins of which overlook the valley, the descendants of “the son of Monteith” grew and multiplied, and by their indomitable Scots pluck became the frontier defence of England; and in the reign of Charles I. one of them named Richard, by his winning manners and worth, became such a favourite at Court that he was created a baronet. He also obtained sole possession of the parishes of Arthurth, Kirkandrews, and part of Bewcastle. Since then the family has played an important part in the history of their country, and in latter years Sir James Graham stands out prominently in the history of the first half of the present century. The present proprietor, Sir Frederick Ulric Graham, is the eldest son of Sir James, preferring the pleasures of private life to the cares of state, and manifests a laudable interest in his noble mansion, estates, and tenantry.

My road leads down through the fields past the old tower to the side of the Esk, on the opposite side of which stood another castle of the Grahams, immortalised as the scene of Sir Walter's “Lochinvar,” and like that young gallant I must “swim the Esk river where ford there is none,” and I have no “stead” good, bad, nor indifferent on which to accomplish the feat; but through the kind consideration of Mr. Kerr, who sent a man to “boat me o'er,” which was fully more comfortable, soon I am at Netherby Hall.

Of the front view of this mansion (than which there is none more interesting, notable and beautiful in all the border land), I need not say one word, as the photograph speaks for itself, but it gives an imperfect idea of the house, which extends backwards and from which a view in many respects better than the front can be obtained. Along the back of the house is a cmented terrace 25 feet broad used as a skating rink, then a grass verge 7 feet wide. A flight of steps leads down to the flower garden, or “terrace garden” as it is called. This was executed about two years ago, and is in keeping with the mansion. During last summer the beds were very gay, having been artistically filled with bedding plants by Mr. Kerr. This garden is backed-up to the east by woods; to the west and south lies a beautiful lawn studded with magnificent Beeches, Sycamores, Oaks, Limes, Elms, and Scotch Firs. Yet I am told that little more than a century ago there was not a tree to be seen in all the locality; and it is impossible to look southwards as far as the eye can reach over the broad and fertile acres of Netherby, lying like a well cultivated garden, without contrasting the sylvan beauty of the scene with the wild desolation of the times when these naked debateable grounds were secured by the moss-troopers.

Netherby is a deeply interesting spot to the archaeologist, as the excavations made about it more than a century ago show, as before mentioned, that it stands upon what has been an

extensive and permanent Roman station. Many rare articles have from time to time been discovered, and as late as two years ago during some alterations a small Roman altar was found in a good state of preservation.

Now, with a short description of the gardens I will close the notes of my deeply interesting day's ramble in Lower Eskdale. Proceeding from Mr. Kerr's house in the direction of the kitchen garden, and passing many cold frames (which were filled with bedding and other useful plants), we come to a propagating pit, length 27 feet, width 11 feet. This is principally filled with some fine young plants intended for table-work. The second house is a quarter-span, length 34 feet, width 10 feet. This is used for growing Pines, and at the time of my visit there were some very fine fruit in it. The sorts grown are principally Queens with a few Charlotte Rothschilds. Passing from this house you enter the kitchen garden, occupying about two acres surrounded by a good brick wall, which is covered with Plum, Pear, and Cherry trees seeming to thrive pretty well. Vegetables are exceedingly well grown and merit special notice. In this garden stands the principal range of forcing houses. The first of the glass structures we enter is a Peach house, length 86 feet, width 15½ feet, filled with healthy fruitful-looking trees. I may mention, that when Mr. Kerr entered on his duties as gardener here he was very much annoyed with scale on the Peach trees, and after trying many compositions all to no effect, he resolved on trying paraffin oil, two wine-glassfuls to three gallons of water. After mixing it thoroughly with the water he syringed the whole of the trees with this mixture. The result is, he has never been annoyed with scale since.

The next house is a stove, length 44 feet, width 15½ feet, filled with a fine variety of specimens of such plants as Crotons, Palms, Ferns, Begonias, Dracenas, Bismas, &c., with *Cissus discolor* trained-up the rafters, which has a good effect. The whole are in perfect health. In passing through this house Mr. Kerr gave me what he has found to be an effectual cure for mealy bug. Thinking that it may be of use to some one, with Mr. Kerr's permission I shall give the readers of the Journal the benefit of it. To one pint of water add two table-spoonfuls of paraffin oil. After mixing it well go over the whole of the plant, leaves and branches, with a sponge.

The next house is a vinery, length 48 feet, width 21½ feet, in which the Vines look remarkably well and bear fine crops of fruit. From this we enter a greenhouse, length 37 feet, width 16½ feet. This house is filled with a miscellaneous lot of plants for house and table decoration. We then come to a vinery, length 48 feet, width 21½ feet, in which are hanging some very fine bunches of Grapes. Mr. Kerr grows all the leading sorts; his favourites are Black Hamburg, Muscat Hamburg, Duchesse of Buccleuch, Frankenthal, Chasselas Napoleon, Royal Muscadine, Mrs. Pinco, Gros Colman, Lady Downe's, Buckland Sweetwater, and Muscat of Alexandria. Waltham Cross has not come up to Mr. Kerr's expectations, and I must say that I quite agree with his opinion. It is pleasantly flavoured, but certainly without the fine high perfume of Muscat of Alexandria and several other Grapes. The next house is also a vinery, length 43 feet, width 15½ feet. The Vines in this house also look well. At the end of this we come to the last of the glass structures, which is a Peach house 44 feet in length and 15½ feet wide, filled with Peach and Nectarine trees, all in fine condition and bearing remarkable crops of superior fruit.

Midway between the house and kitchen garden is a geometrical flower garden in gravel and edged with fancy tiles. This goes under the name of Lady Graham's flower garden. It looks well at all times of the year, but decidedly best when gay with Tulips, as they show off the figures to the best advantage.

Immediately outside the kitchen garden there is a considerable piece of ground used for growing vegetables, and at a short distance from this is the orchard, unfortunately in a very unfavourable situation for fruit trees, lying low and wet. The trees are all very old and past their best. Mr. Kerr gave them a washing with lime water, and mulched them with manure a few years ago, which has assisted them greatly.

Not far from this is the pinetum, in which most noteworthy are the following trees:—*Wellingtonia gigantea*, *Abies Douglassii*, *Picea Nordmanniana*, *nobilis*, and *Webbiana*, *Pinus austriaca*, and *Thujopsis borealis*. Proceeding from this in the direction of the house, you pass a square cmented enclosure surrounded with an ornamental fence of wire netting. This is used for lawn tennis. There are many fine and pleasant walks through the parks and woods, where various grand peeps of scenery

ars to be had; but of this I have not time to notice further than saying that everything, both grounds and gardens, are in the best state of keeping.—JAMES DICKSON, *Arkleton*.

THE HERB GARDEN.

HERBS are often neglected unless a special place is set apart for them. They are indispensable to every garden and household, and perhaps a few lines in reference to them will not be out of season. I find any time during the winter suitable for dividing and planting most herbs, such as Golden, Common, and Lemon Thyme, Balm, &c. Beds should be retained for growing the annual herbs, as Sweet Basil, Marjoram, Chervil, Marigold, Borage, &c., for without a plentiful supply of these a gardener cannot keep on good terms with the cook. A few of the most useful of the herbs are—

Balm (*Melissa officinalis*).—An aromatic herb which used to be a great favourite, but is less in request now than formerly. I find it very useful for bees; it is propagated easily by division of the roots in late autumn or early spring. All the attention it needs is to cut the stems down and fork round the roots in late autumn.

Sweet Basil (*Ocimum basilicum*) is a herb which no garden should be without. It and the Knotted Marjoram are important in making mock turtle soup. A few seedlings should be raised in heat for early use.

Fennel (*Anethum foeniculum*) is one of those herbs which must have a place in every herb garden however limited. It is chiefly used for sauce and for garnishing pickled salmon and mackerel. It is a perennial, and will live many years if the stalks are cut down so as to prevent it going to seed. It is readily raised from seed, and increased by division.

Sweet Marjoram (*Origanum marjorana*) is a herb which should be allowed its necessary space in every garden, for it is at all times useful for giving flavour. There are two other sorts, the pot and winter Marjoram, both of which are hardy perennials, and are valuable and easily-grown herbs.

Mint (*Mentha viridis*) is a herb of such daily utility as to demand a place in all herb gardens. It is easily propagated by planting pieces of the root, which spread along under and over the ground. It requires a moist soil and a shady border, and is all the better for a little rich mulching once or twice a year.

Parsley (*Apium petroselinum*).—Of all the herbs in the garden there is not one which is wanted in the kitchen so often as this. It is a long time coming up after the seed is sown, often two months, and when it is up it is not of very rapid growth. Being a biennial the seed must be sown every year, and I find the plants are strengthened by cutting some of them down in the early autumn, so that they will live through the winter and give a good supply in the spring.

Rue (*Ruta graveolens*) is a bitter plant. The leaves have a very powerful scent; some persons like the flavour it imparts to tea. It is generally grown from cuttings, also from seed sown in the spring.

Sage (*Salvia officinalis*) is also one of the most useful of herbs, which must be grown in every garden. It likes a dry sheltered border. It is propagated from cuttings, also from seed sown in the spring. It is all the better for a little rich mulching as the plants grow old.

Winter Savory (*Satureia montana*) is a herb of such great utility that it can ill be spared from the smallest herb garden. It is an excellent flavourer for many different dishes. It is easily grown from seed sown in April, or from cuttings planted in a shady border.

Thyme (*Thymus vulgaris*) is also one of those herbs which must have a corner in every garden. Common Thyme grows readily from seed sown in April, and is also increased by division of the roots. Lemon Thyme (*Thymus citridorone*) is far superior to the other, and it may be increased readily by layering its procumbent branches.—H. S. J.

CHAPTERS ON INSECTS FOR GARDENERS.

No. 16.

THE somewhat singular name of "larva," which modern naturalists adopt as a general appellation for the second stage of insect life, took its rise from the fanciful notion that at this period of its history the proper insect moved about as if masked or concealed; this name, we remark, is much more applicable in some orders than in others. No one would suspect a butterfly was hidden under the cylindrical crawling

creature which is seen intently engaged in stripping the leaves from a plant or tree; but the larva of many beetles are certainly beetle-like, and the larva of a grasshopper, size excepted, to an ordinary eye is little different from the perfect insect. Rapidity of growth in the larva or caterpillar stage is also a circumstance more frequent than in several orders, and herein the butterflies have mostly the advantage of their companions the moths of the same order. It is particularly noticeable, this difference between them, in the matter of what is called "ecdysis;" the process of casting the skin, which has to befall all caterpillars a varying number of times. (One has not opportunities for verifying the fact in the case of internal feeders upon the pith of shrubs and trees, but it may be presumed these follow the general law.) A moth caterpillar seems frequently to make a great fuss in going through one of these moults; it selects carefully a place to rest upon, ceases to eat several days before, and when the change is over, does not eat for a day. But a butterfly caterpillar accelerates the business, I have noticed the common Nettle-asters (*Vanessa Io* and *Urtice*) feeding on until the old skin was wellnigh ready to burst, and a day might suffice for the whole affair. Nor do I find on record proofs that the number of these changes with butterfly caterpillars reaches that attained to by some of the moths, where eight or even ten changes have been observed, these occurring in caterpillars which live from six to nine months. The pugnacity or cannibalism, again, which is a peculiar feature in the history of some moth caterpillars, has not a parallel amongst British butterflies, which, as caterpillars, are the pink of amiability to each other, despite their spiny armour, which in some species might seem suggestive of the well-known motto attached to the Scottish Thistle, and which, in all probability, gives some hungry birds a colic!

A lady, more amusing than versacions, who wrote a once famous book on butterflies, tries to philosophise by telling us that "Nature keeps her butterflies and caterpillars locked up during the winter in their egg state," and she follows this up by the theory that the spring and summer is the great season for caterpillars, the autumn for butterflies. Now it is true that in early autumn, at a date varying with the season, there are large numbers of butterflies abroad, and there is also a spring flight of these insects, made up of hibernated individuals, or of others that have passed the winter in the chrysalis state; but it is also true that on fine days from April to October there will always be butterflies abroad, nor can we fix any particular season for the feeding of the majority of caterpillars. And as to the idea about the egg state, that is easily disproved, for, save in the small group of the Hairstreaks, it does not appear that any butterflies lay eggs in the autumn to hatch out in spring. Many butterflies' eggs, notably those laid on Brassicaceous plants, hatch in about a fortnight, so that the horticulturist who has seen any "children of the sun" hovering over his Cabbages and Cauliflowers had better look on the leaves without much delay for the minepin-shaped ribbed eggs they have left behind, if he wishes to anticipate the ravages of the future, and make their possible birthplace their tomb.

Eggs, we take for granted, cannot feel; it is doubtful whether during the winter season the pupa or chrysalis feels; hence, without hesitation, we may destroy those of the Large and Small Whites (*P. Brassicæ* and *Rapi*) to be found here and there at this time on walls, palings, and trunks of trees. Yet so strong is their vitality that during severe weather these have been found frozen hard and quite brittle, but this has not prevented the due emergence of the butterfly. And the position of the pupa marks off as distinct from the other British butterflies the few species belonging to the family of the Skippers, for only amongst these is the pupa hidden in a silken cocoon. The large group of the Exposers is capable of being subdivided very distinctly; and the first section consists of those species in which the pupa is simply suspended by the tail, and we have a butterfly with the first pair of legs unfitted for walking. Within this section are two families—that of the "Spine-bearers," where the caterpillars have spines, usually branched, and that with "Slug-shaped" caterpillars, where these are plump, sometimes a little elongated, bare or slightly downy, and with two small points projecting from the tail. The *Fritillaries*, most frequently seen in or near woods, head the first family; some of these in the butterfly state display beautiful silvery spots, the markings in the bulk of the species resembling the old-fashioned Lily so called with chequered flowers. Their period of flight seldom exceeds two or three weeks. No less than six of the caterpillars of our *Fritillaries* feed on Violets, though not on cultivated species,

and the curious spines in one or two species project over the head like horns. A familiar example is the Pearl-bordered (*Argynnis Empoeyne*) to be captured in most large woods by the score early in June. We pass from these to the more showy group of the Angle-wings, often with gregarious larvae, generally attached to the order *Urticeae*, as formerly constituted, feeding on Nettles, the Hop, and the Elm; though the Painted Lady (*Vanessa Cardui*) prefers Thistles, yet the larva will eat Nettles. These species, the *Vanesside*, as recognized even by children through such familiar names as the Peacock, the Tortoiseshell, and the Red Admiral (Admirable?) are visitors to our gardens, where their graceful and rapid movements are pleasing; nor is their abstraction of honey so carried on as to injure the flowers they frequent. The not very abundant *Comma* (*V. C. album*) it should be noted, though the caterpillar feeds on the Hop, or rarely on the Red Currant, is too slightly injurious to be reckoned as an insect enemy. Of this and the Little Tortoiseshell there are two broods each year; rearing the latter (*V. Urtice*) from the unpromising larva which swarm on Nettles in odd corners during May, and again in July, has been to many the first experiment in butterfly nurture. The pretty White Admiral (*V. Sybilla*) is, however, a lover of woods, where the caterpillar eats Honeysuckle; it was once common at Coombe Wood, Surrey, near the ground rendered famous by a nurseryman of our time.—J. R. S. C.

FRUITS IN ONTARIO.

ONTARIO is as well adapted for the culture of a great variety of fruits as any part of the world. Its climate closely resembles that of the Grape-growing provinces of the Rhine. The western portion of Ontario has been pronounced by authorities to be the most suitable part of the American continent for Grape culture. There is ample sun to ripen the fruit, and the Vines can stand the frosts of winter without artificial protection. Vineyards require too much labour for a new country, but in process of time no doubt Canada will be able to make its own wine. Peaches, Apricots, and Nectarines ripen in the extreme south and west—I mean as orchard crops. In favourable situations these fruits ripen in gardens here and there all through Canada West.

The Apple orchards of Ontario, both as regards the quantities and qualities of the fruit, are second to none in the world. The export of Apples has been found such a profitable business that farmers through the province have been adding largely to their orchards during the last few years. A ten-acre orchard is not an unusual sight, and I have seen orchards as large as forty acres. Many of the so-called American Apples that we see in the shops at home are grown in Canada. The following are some of the favourite kinds:—Rhode Island Greening, Northern Spy, Baldwin, Swazee, Pomme Grise Famense, Duchesse of Oldenburgh, Swaz, Gravenstein, Blenheim Orange, Keswick Codlin, Holland Pippin, Alexander, American Golden Russet, Red Astrachan, Ribston Pippin, Esopus Spitzenburg, and King of Tomkin's County.

The Fruit-growers' Association of Canada recommend the following varieties—viz. For summer: The Early Harvest and Red Astrachan as our Apples, and the Sweet Dough. For early autumn: The Duchess of Oldenburgh, Gravenstein, Primrose, and Jersey Sweet. For late autumn and early winter: The Ribston Pippin, Hubbardston Nonsuch, Fall Pippin, and Snow Apple. For midwinter to March: The Rhode Island Greening, Northern Spy, Esopus Spitzenburg, Pomme Grise, and Tolman Sweet. For spring: The Golden Russet and Roxbury Russet. For market the most profitable varieties are Red Astrachan, Duchesse of Oldenburgh, Gravenstein, and Hubbardston Nonsuch, ripening in the order in which they are named. For a near or home market and for shipping the Rhode Island Greening, Baldwin, Golden Russet, and Roxbury Russet will yield the largest pecuniary returns.

Apples are barrelled in the orchards and despatched there and then to market. The orchard in Canada West, with very little labour and moderate attention, is a source of a clear annual income to the farmer who possesses one. To make an orchard, 25 cents per tree is the estimated cost. The trees commence bearing in ten years. Farmers who do not like the risk or the trouble of marketing their Apples can sell them in the orchard for from \$1.50 to \$2 per barrel.

Pears do equally well as Apples, but being a tenderer and more delicate fruit they are more difficult to bring to market. The following are the chief varieties grown:—Louise Bonno of Jersey, Bartlett, Beurré d'Anjou, Beurré Clairgean, Flemish

Beauty, Duchesse d'Angoulême, Grasiin, Sheldon, and Winter Nells.

Melons, both sweet Melons and water Melons, ripen throughout Canada. The habitants of Lower Canada grow Musk and Citron Melons in their little gardens that would throw in the shade the Melons forced at great cost in good English gardens.

All the well-known English small fruits, except the Gooseberry, do admirably in Ontario. The cultivation of these fruits for market is now a very profitable business in certain localities. In the vicinity of Oakville on Lake Ontario there is a large breadth of land under Strawberries—an acre or so on every farm, and occasionally as much as ten acres. Both climate and soil in the vicinity of Lake Ontario seem admirably adapted to this fruit. The facilities for marketing fruit or vegetables either by land or by water carriage are unrivalled, and the demand for both, but especially for Strawberries, seems to be unlimited in the eastern states. The capital required for small fruit farming is not large, and I know of no way in which an industrious immigrant with some knowledge of this species of agriculture could do better than by buying a small farm in Ontario and devoting himself entirely to fruit-farming. He might, along with Strawberry plants, plant Apple, Pear, and Currant trees, which would be an ample provision for his old age; or three or four small capitalists might buy one of the large Ontario Wheat farms between them and divide it into small fruit farms.

Strawberries in Ontario are planted in rows about 3 or 4 feet apart. The plants bear in the second year. In the fall they are top-dressed with litter or stable manure. After the fruit is picked in the summer horse hoes are worked up and down the drills, the soil well loosened, and the weeds taken out. This is all the cultivation Strawberries require. The plants bear abundantly for two or three seasons, and should at the end of that period be ploughed down, when a crop of Turnips can be taken off the land without extra manure. The land cannot be too highly manured in which the plants are put. To do the Strawberry culture properly and keep up a rotation of crops a man would require four fields, say of four acres in each. The chief labour connected with Strawberry culture is picking the fruit. This is generally done by children, who pick at 1 cent the quart. The demand for Strawberries is so great that buyers come to the country and give 8 or 9 cents a quart for the fruit on the spot, thus saving the cultivator all trouble of marketing. At the latter price I have known of \$500 worth of Strawberries being sold off one acre of land. The variety of Strawberry most in favour among fruit-growers is Wilson's Albany. The wages of a good man in Ontario accustomed to this work is \$1 per diem if hired by the whole year, or \$1.25 if hired for eight months of the year.—(*Rowan's The Emigrant and Sportsman in Canada.*)

NOTES AND GLEANINGS.

THE retirement from business of Mr. JOHN LEE after his long and honourable career has seemed to some of his friends a fitting opportunity to evince the respect and esteem with which he is regarded, and they propose therefore inviting him to a complimentary dinner to be held at the Horticultural Club, 3 and 4, Adelphi Terrace, on Thursday, February 15th.

At a meeting of FLORISTS at the Horticultural Club on the 31st ult., the final arrangements were made for the Auricular Show to be held at the Crystal Palace on April 24th. The schedule, as drawn up by a special Committee, was adopted with a few slight modifications, which were made to meet to a certain extent the views of the northern growers. The schedule is on a very liberal scale, but the full amount has very nearly been subscribed or promised; a few pounds more would remove all anxiety as to means. The projected show of Carnations and Picotees was approved of, and a Committee, with power to add to their number, was appointed to make the preliminary arrangements. It was the unanimous wish of those present that the show be held at South Kensington. G. F. Wilson, Esq., F.R.H.S., was elected President, and E. S. Dodwell, Esq., Hon. Sec. The sum of £25 was subscribed in the room towards the prize fund.

THE COMMITTEE of the HALLSTON RELIEF FUND have published their report, from which it appears that the amount subscribed has been £779 18s. 7d., of which £699 15s. 8d. was paid to applicants for relief, and the remainder for advertisements, printing, postage, commission to Secretary, and hire of committee rooms.

— Mr. EDWARD BENNETT, Rabley Nurseries, Herts, has been appointed FLORAL DECORATOR AT THE ROYAL AQUARIUM Westminster. Mr. Bennett was formerly gardener at Hatfield, Enville, and Osberton, and has consequently had great experience in ornamental gardening. We understand that some changes in the mode of decoration are to be adopted, and which experience has suggested will be as far as possible suitable to the peculiar nature of the building.

— Mr. DADDS, North Devon Fernery, Ilfracombe, says that he knows more than twenty places within nine miles of the coast of Ilfracombe where the MAIDEN-HAIR FERN grows wild. He has seen at Boscastle and the neighbouring coast more than would load a railway truck. Another correspondent states that he can remember when the Maiden-hair grew among some rocks called the "Giant's Chair," on the Titterstone Clee Hill in Shropshire, but he believes it has all disappeared from there now.

— We are informed that Mr. Charles Turner, The Royal Nurseries, Slough, has purchased by tender the whole of Mr. LAXTON'S STOCK OF ROSES, including both named and unnamed seedlings.

— A MEETING of the Committee of the NATIONAL ROSE SOCIETY was held yesterday at the Horticultural Club, Adelphi Terrace; Hon. and Rev. J. T. Boswell in the chair. The business consisted in the preparation of the schedule and making preliminary arrangements with regard to the Show which is to be held in St. James's Hall in July next.

— In reply to an address lately presented by a distinguished deputation from the ROYAL HORTICULTURAL SOCIETY OF IRELAND the Duke of Marlborough, after expressing his pleasure in receiving the address, remarked that "the pursuit and the science of horticulture and the diffusion of a love for plants and flowers amongst the population are objects which, in my opinion, will tend to embellish a country already highly favoured by nature, to beautify the parks and gardens of the wealthy, and to cheer and render attractive the cottages of the poor." His Grace promised to give whatever aid he could to the Society, and should have pleasure in attending its exhibitions.

— We have received the schedule of prizes offered by the NEWCASTLE, NORTHUMBERLAND, AND DURHAM BOTANICAL AND HORTICULTURAL SOCIETY. This old Society (established in 1824) is unusually vigorous, having as the result of special efforts and energetic management admitted no fewer than 1300 new members during the brief space of two months. The Society now numbers two thousand members, and has a subscription income of upwards of £700. Three exhibitions are to be held during the season—namely, on March 21st and 22nd, July 12th and 13th, and September 12th and 13th; the aggregate value of the prizes offered being £530. About eighty donors have contributed to the special prize fund. The schedule is divided into sixty-seven classes, and the following summary of leading prizes is announced:—Ornamental plants, £125; Table decorations, &c., £90; Ferns, £25; Azaleas, Rhododendrons, and Camellias, £25; Pelargoniums, £38; Roses, £40; Dahlias and Hollyhocks, £30; Fuchsias and Ericas, £25; Liliums and Gladioli, £15; Hyacinths, Tulips, Cyclamens, Primulas, &c., £35; Hardy spring plants, cut flowers, &c., £50; Fruit, £35. The Society is deserving of encouragement and success. The Hon. Secs. are Mr. J. Taylor, Rye Hill, and Mr. J. H. French, South Benwell House; the acting Secretary being Mr. J. A. Stephenson, 1, Queen Street, Newcastle-upon-Tyne.

— A CORRESPONDENT writes to us that a weak solution of carbolic acid (about half a dozen drops to a gallon of water) will DESTROY WORMS AND GRUBS IN FLOWER POTS without injuring the plants. Paraffin (diluted) is also said to have the same effect. We have not tried these remedies, having always found perfectly clear lime and soot water effectual without being injurious.

— We have not to travel far in any direction to perceive mistakes which have been made in planting SHRUBS AND CONIFERS, and especially in small gardens. However small the lawn may be, it seems to have been thought the right place for a Wellingtonia and a Deodar. These deservedly popular trees, with Pinus excelea, P. Douglasii, and others of commanding growth, have been planted "where they could be seen" when young at the fronts of borders and a few feet only from the walk. For a year or two after planting these Conifers look very well in such positions, but eventually they

become too large and have to be mutilated just when arriving at their greatest beauty. Such strong growers should always be planted more or less in the background, even at the risk of veiling their beauty for a year or two, and the advantage of doing so will in the end be decisive and permanent. Very small lawns should be occupied with proportionally small-growing Conifers, and the choice of these is great. Junipers, Cupressus, Thujae, Biotas, Retinosporas, &c., are all suitable for suburban gardens, and are not planted nearly so freely as is desirable in small enclosures. On small lawns small-growing Conifers increase in beauty yearly, but large-growing kinds in such places are incongruous and are not permanently ornamental.

— The representative of a leading firm of seedsmen has sent us the following forcible comment on the letter referring to the PURCHASE AND THE SALE OF SEEDS which appeared on page 84 and headed, "Doing as He Would be Done By:—" "The more one thinks of the present system of the seedsmen's journey sales in the summer—brought home to us by the losses we must sustain this year by the reckless gambling prices at which seeds were sold—the more insane does that system appear. Is there any other trade in trading England where sales are made at a stated price of goods which may perchance never be produced at all? The old system of waiting to see what the harvest would yield was the legitimate one; was fair, honest, and far more profitable to all parties, and more worthy of such a trading country as England."

— The following modes of DESTROYING SCALE AND MEALY BUG which have been found successful by Mr. Kerr at Netherby as recorded in another column, are worthy of being tried by others who are troubled with these destructive insects:—Scale on Peach trees, two wine-glassfuls of paraffin oil to three gallons of water; mix thoroughly and syringe the trees. Mealy bug, two table-spoonfuls of paraffin to one pint of water: apply with a sponge.

— THE "GARDEN ORACLE," by Mr. Shirley Hibberd, for the present year is now published, and contains a great deal of useful information and many illustrations.

— THE Council Meeting of the BATH AND WEST OF ENGLAND SOCIETY was held on January 30th, at the Grand Hotel, Bristol, the Marquis of Lansdowne, president, in the chair. The Finance Committee presented the annual statement, which showed that the pecuniary loss sustained by the Society at the Hereford Meeting (1876) was less than anticipated, being only £160. It was unanimously resolved that "the Mayor and Corporation of Bath having expressed a strong hope that the Patron of the Society, H.R.H. the Prince of Wales, and the Princess of Wales, would honour the city of Bath on the occasion of the hundredth anniversary, and the Council being assured that the visit would be most gratefully appreciated through the entire west of England as well as highly conducive to the interests of the Society, the President be requested to submit an invitation to their Royal Highnesses for any day of the week (Wednesday being the best day), and in any manner which may be most convenient."

— In the course of a lecture delivered on the 2nd inst. by Mr. A. Burrell at the Society of Arts on INDIAN TEA CULTIVATION, it was urged that the soil and climate of India were in every way admirably adapted for the culture of the Tea plant, the produce sent out by the Indian Tea-growers being in no way inferior, and in many instances much superior to the Teas of China. To convey an idea of the steadily increasing consumption of Indian Tea in our own country, it was mentioned that the imports of this article during 1876 had amounted to 27,000,000 lb., or 19 per cent. of the total consumption of the year; while it was anticipated that the imports of the present year would amount to at least 32,000,000 lb., or 25 per cent. of the probable total consumption of the year in the United Kingdom.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

THERE will be plenty of work in this department by-and-by. So far we have done but little, but it was well that a good proportion of the digging and trenching had been done in the autumn. A succession of Asparagus and Seakale must be kept up by introducing a fresh batch of plants fortnightly, the quantity to be regulated by the supply. The heat can be retained in the frames by covering the glass at nights with mats; but Asparagus, unlike Seakale, requires plenty of light in the daytime;

the mats should be removed shortly after daybreak, and not be replaced until nightfall.

A crop of early Potatoes may be raised by planting the sets in frames, if no other conveniences are available. Good loam, to which some leaf soil has been added, is about the best material in which to plant them; over-rich soil has a tendency to produce too much haulm. A few dishes of Potatoes or other vegetables—such as early Peas or Dwarf Kidney Peas, before the earliest out-of-door crops come in, are usually much valued even if a regular supply cannot be maintained. Potatoes and Peas may be had by growing in pots, but it is well to place the pots in a position near the glass and where light and air may be freely admitted. A very high temperature is unsuitable for Peas and Potatoes. Dwarf Kidney Beans will succeed in a Pine house, and they are not so particular about being placed near the glass.

Cauliflower plants in frames or hand-glasses require a little attention. The lights should be quite removed in fine weather, but the plants must be sheltered from pelting rain; indeed, too much wet is injurious. Plants in hand-lights will not require any water during winter. We have now made a sowing of Early London to succeed the autumn-sown plants. The seeds were sown in shallow boxes and placed in a heated frame which has been used for cuttings, for the last three or four weeks. Where a large quantity of plants are required it is better to put 2 or 3 inches of fine soil over the surface of the bed and sow the seeds in that.

A sowing of Broad Beans has been made. The only variety we grow either for late or early crops is a selection of the Windsor. The rows are about 3 feet apart, and about 4 inches are allowed between the Beans in the rows. In heavy soils after so much rain it will, perhaps, be better to keep the seeds out of the ground until it is in a better condition. A good plan, too, is to sow some Beans in shallow boxes, and then place the boxes in any house that is not forced too much. The night temperature should not be more than 65°, and when the Beans are well out of the ground the boxes should be removed to a cooler place and the Beans be gradually hardened, and subsequently be planted in the open ground.

We generally make a sowing of Carrots about the middle of this month on a dry border, and cover the bed with ground vinerias, at the same time Lettuce and Radish seeds are sown. If a gentle hotbed could be made available for this purpose the crop would be ready to gather about ten days earlier. Chives are not grown so much now as they used to be. In small gardens in Scotland a row used generally to find a place; they are a good substitute for spring Onions, and are also used in salads. They are easily propagated by dividing the plants. They are of dwarf habit, and 8 inches between the rows and about 4 inches apart in the rows are suitable distances. A sowing of Round Spinach should also be made now. The soil cannot be too rich. In soil highly manured the leaves grow thick and fleshy, and of a deep rich green. In order to produce Leeks of the largest size and well blanched, a sowing ought to be made as soon as the weather is suitable. The seed may be sown broadcast on a small space of ground, the plants to be transplanted when large enough. We shall immediately make a sowing of Parsnips on rich deeply-trenched ground, but no crude manure should come in contact with the roots near the surface, as this will cause them to become forked. It is a good plan to place the manure in the bottom of the trenches in the autumn.

VINES.

In the earliest house the growths are now making rapid progress, and we have commenced tying them out, arranging them as regularly as possible over the whole surface of the trellis work. The Vines are trained on the short-spur system, the rods being from 2 feet 6 inches to 3 feet apart, and the distance between each spur measures from 15 inches to 2 feet. When Vines are in vigorous health four or five shoots will start from each spur: these are all removed but the two strongest; and when it can be seen on which the best bunches are likely to be, those shoots are tied down a little at a time. If bent too much at once they are liable to snap off close to the old wood. It is better not to remove the second shoot until it is seen that the one to remain is safe. The laterals are stopped two leaves beyond the fruit as soon as the growth is sufficiently developed. We shall in a day or two give a good watering with tepid water, and add some fresh fermenting material to the outside border. A gentle heat is also kept up in the ridge of stable manure inside the house. It is unsafe to put rank manure in the house when the leaves are newly developed unless it is mixed with a large proportion of some that is partially decayed. The temperature at night is raised to 65° after the second watering.

Vines in pots, if it is necessary to have fruit from them in April and May, will now be at that stage which will admit of a high temperature being kept up in the house. Surface-dress the pots with rich compost, and water twice a week with manure water.

Orange trees in the Pine house are heavily loaded with fruit, but only those trees which were in flower after the 1st of March

are in that state, and the fruit is not yet ripe. One tree is now in flower, but unless the weather improves it is doubtful if the blossoms will set well. Plenty of ventilation is necessary during the blossoming period, and the stigmas ought to be dusted with the pollen. Some of the trees seem to do without any season of rest. At present there are fruits nearly ripe, some green and as large as a Potato apple, and a large quantity of blossom on one tree, which tree is in the best possible health, and the ripe fruit very fine indeed. The Orange is a gross feeder, and to obtain fruit of the best quality the plants must be potted in good turfy loam; and when well established regular supplies of manure water are necessary to the perfect development of the fruits.

GREENHOUSE AND CONSERVATORY.

It is now a good time to report show and fancy *Perlargonium* into their blooming pots. We began potting ours on the second day of the present month. After they have been reported they are placed close to the glass, and the growths are tied out to allow more space between them. Sometimes it is necessary to thin out the growths if they are too close to each other. The stage varieties are much more hardy than the fancy section, and they will grow and flower even with indiffererent treatment, but to do them well they should be potted in turfy loam with a fourth part of decayed cow manure, and some silver sand to keep the compost open; a little leaf soil is also an improvement. If the plants are young they do not require so much manure, say one-sixth. It is a great mistake to overpot them: 8-inch pots are large enough for specimens 3 or 4 feet across, and a plant that will produce two dozen trusses will do well in a 6-inch pot. We annually grow a number of plants in 5-inch pots, and they flower profusely. It is better not to water the plants for a few days after repotting them. There are a few early varieties adapted for forcing, but the show sorts succeed best if they are kept in a greenhouse temperature throughout. A few of the best varieties are Ambassador, Diplomatist, Gipsy, George Frederick, Mountaineer, Modesty and Potentate, which are new varieties of last year. Of older sorts the best are Achievement, Admiration, Aristocrat, Blue Boy, Charles Turner, Claribel, Constance, Duchesses of Cambridge, Falcon, Highland Laisie, Iron Duke, Marquis, Mary Hoyle, Prince Leopold, Sultan, Sybil, and Warrior. A few of the best fancy varieties are Countess of Dudley, Duchess of Edinburgh, and Nelly Fortham, which are new sorts. Older varieties are Aome, Anna Page, Atlantic, Cloth of Silver, Eret Lynn, Ellen Beck, Fanny Gair, Godfrey Turner, Henry Baley, Jowan, Jowett, Mrs. Hart, Princess Teck, Roi des Fantaisies, The Shah, Udine, and Vivandiere. The French spotted sorts are preferred by some; they are very pretty, and generally flower freely. A few of the best are Beauty of Oxton, Captain Raikes, Duchess of Edinburgh, Empress, Nabob, Queen Victoria, and Triomphe de St. Mandé.

Cinerarias ought to be in their flowering pots long before this. The plants must be trained as they require it, and those which have filled the pots with roots should be supplied with weak manure water about once or twice a week.

It is now quite time that all the *Chrysanthemum* cuttings were potted. They strike very freely in a gentle hotbed, and as soon as the roots are formed a little more air ought to be admitted, as the plants are apt to draw up weakly in a close atmosphere. Our earliest cuttings have been potted in large pots, and are now in a well-ventilated frame; a house would be better where the frost could easily be kept out. During warm nights the ventilators should not be closed. Success is secured in growing such plants as these without any check, and yet they ought to be freely exposed to the air.

We have repotted plants of different varieties of *Kalosanthes*. This plant does best in rich turfy loam, with leaf soil and sand added to it. Cuttings put in last year in July or August are now in 60-sized pots. They will be potted-on as they require it, and will in the course of the season make very handsome specimens.

All the Dutch bulbs, such as *Hycacinths*, *Tulips*, *Polyanthus*, *Narcissus*, &c., have been removed to the houses where they are intended to flower. Those who have not yet taken the latest-flowering specimens out of the material in which they were plunged during winter ought to do so at once.

We have put a few pots of *Pink Lady* *Blanche* into a house to force. Such common and easy grown plants as *Pinks*, *Mignonette*, &c., are easily brought-on in a little heat, and are very useful for furnishing the front stages.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

W. Barron & Sons, 16, Market Street, Nottingham.—*Catalogue of Vegetable and Flower Seeds.*

R. B. Matthews, 65 and 67, Victoria Street, Belfast.—*Cultural Guide, and General Seed Catalogue.*

Stephen Brown, Weston-super-Mare.—*Illustrated Seed Catalogue, with Lists of Dulbs and Roots for Spring Planting.*

Edmondson Brothers, 10, Dame Street, Dublin.—*Spring Catalogue of Vegetable and Flower Seeds, Culinary Roots, Flowering Plants, Implements, &c.*

TO CORRESPONDENTS.

*. All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to un-necessary trouble and expense.

WILD FLOWERS (A Lady).—We are informed by the artist, Mr. W. G. Mitchell, that they will be concluded in thirty more numbers.

RHODODENDRONS AND WIREWORMS (H. B.).—Try oil cake powdered and sprinkled thickly on the roots after removing the soil. It might preserve them. Let us know the result.

HYACINTH (P. F. S.).—The flower-like being compressed by the bases of the leaves is very unusual, but is only one of the unaccountable vagaries incident to plant growth.

CERAPLANTA BRAZILIENSIS (G. H.).—It is a stove evergreen tree, a native of Jamaica, from whence it was introduced in 1739. The tree grows 20 feet high, has orange flowers, and yields the Brazil wood of commerce.

TRAINING CHRYSANTHEMUMS (A Constant Reader).—Let the hoops remain; they will or ought to be completely hidden by the foliage. The stakes should be as thin as possible, consistent with being flamed and stakes a foot to 18 inches long will be little or any thicker than the stem of a tobacco pipe. Stakes double the length may be double that thickness at the bottom, tapering to the top.

PEACH-TREE SPRAY (A. Hopkins).—The decayed places are caused by the unfavourable season, and the young wood being not matured.

PEA (An Old Subscriber).—The description agrees with what is known as the Rose PEA. We will publish your note next week.

SEMI-TRANSPARENT PAPER (An Amateur).—Fasten the paper on the frame, and well-soiled sheet of glass.

STOVE CLEMATIS (A Learner).—As you have Stephanotis floribunda, and need two more, obtain *Clematidum Balfourii* and *Ipomoea Horsfallii*.

GROWING ASTERS IN POTS (P. F. S.).—Sow the seed during March or early April (as you require the plants to bloom early or late) in pans, placing in gentle heat as that of a hotbed. When the plants appear keep them near the glass, and well ventilated to prevent drawing. Pot them singly in 3-inch pots, watering as usual, and keeping rather close and shaded until well established. After this admit air freely, the main points being to keep them slowly growing, and not allowing them to become pot-bound before shifting into larger pots. If sown in March the plants will be strong and well hardened off by the beginning of May. An 8-inch pot will meet the requirements of single plants, a 9-inch tub, and a 10-inch or 11-inch will answer for five plants. The soil may be composed of three parts turfy loam and a third of thoroughly decayed manure or leaf soil. The plants should be potted rather firmly in well-drained pots, and have a light and open situation if continued under glass, which we do not advise, but would assign them a situation on ashes. After the plants fill the pots with roots, water them with weak liquid manure. If sown during early April the plants will require their blooming pots by the close of May or early in June.

CONSERVATORY WITH EAST ASPECT (W. M.).—Your house being cold will not answer for plants requiring protection from frost, as *Pelargoniums*, *Fuchsias*, &c.; nor for a Vine, which would not answer in an unheated house in winter. We should advise you to decide between Ferns and Roses. If the first, we would have the Ferns planted out, forming rockwork for them, and selecting the better kinds of hardy Ferns. If Roses are determined upon, we should advise for planting them out in borders within the house, though for the roof the roots may be outside, the stems being introduced through the wall in the interior, and the plants being taken up by Roses trained to pillars as pyramids, and the back trellised for climbing Roses. The kinds we should choose for this purpose would be Tea-scented. Should you decide to heat the house so as to exclude frost, you would be enabled to have a greater variety of plants; in fact, most greenhouse plants would thrive in it, and those would afford you greater satisfaction that could be had from an unheated house devoted to but one class of plants.

AN AMATEUR'S VINEY (Sir Astley).—Do not attempt training up climbing Roses in a viney, or both Vines and Roses will fail. Devote the whole of the roof to the Vines, and grow your Roses in pots, introducing a few in succession into your front bed, where you will also and Tomatoes answer well, and you will not be obliged to have the house being taken up by Roses, they should be grown in pots. You may also grow excellent crops of Cucumbers in pots planted in the bed. If you attempt this, do not fail to give them an abundant supply of liquid manure, or the fruit will prove small and very tipped.

VEGETABLES (W. P.).—As your soil produces good Turnip Radishes, but not the long varieties, we recommend you to try putting some well-decayed manure at the bottom of each trench when the ground is dug. The roots will probably descend straight to it.

AZALEAS LOVING FOLIAGE (W. Hamilton).—Carelessness in watering and the attacks of insects are generally the causes of the bareness of which you complain in your plants. Let the plants be closely examined, and if any signs of insects will upon the leaves, they should be rubbed with a weak soap and tobacco water, repeating the operation on alternate days for a week. If the pots are small in proportion to the size of the plants and are crowded with roots report at once in light fibrous soil with plenty of white gritty sand mixed with it (see part last to three parts part), take special care that the drainage be thorough, the trees to become very rammed in, and use pots of 11 to 2 inches more in diameter than the old pots; take the plants from the potting bench to a somewhat shaded position in the hot-house, use the syringe freely, but apply water to the roots sparingly till the new growth is pushing freely; after they have finished growing place them in a sunny position to ripen the new growth. When the flower buds are so far developed that you can feel them remove the plants to a cooler temperature, and let them have plenty of fresh air. The most important points in the culture of Azaleas are—the watering, cleanliness of the foliage, an early and well-thought about attention to the insects, which we have described, and abundance of air and light after the growth is matured.

INARCHING GRAPE VINES (Constant Reader).—You may inarch the Vines as you propose, but our experience tells us that what succeeds well in one instance will not do in another. Black Hamburgh is a good stock for

Blackland Sweetwater. Lady Downe's does best on its own roots. We should like to know the result of your inarching Mill Hill Hamburgh on Chasseles Masque.

BEST BRASSERIES (J.).—Yellow Antwerp, Fostell, Prince of Wales, and Red Antwerp. *Choccoleries*: Red Warrington, Red Champagne, Early Sulphur, Yellow Champagne, Rumbullion, and Green Gascoigne. *Currants*: Black Naples, Black Castle, and White Dutch. Any respectable tradesman can supply you.

HEATING LEAN-TO HOUSE (E. D. L.).—Two rows of 4-inch pipes might heat a house 9 feet wide by 6 feet 6 inches at back; but to keep up 60° in all weathers you ought to put in three rows.

MARKING A HOTBED (W. Fitzpatrick).—See reply to "E. G. M." To raise an early *Yarrow* the position you mention a very slight hotbed will suffice say from 2 to 3 feet in height, well tramped, and covered with 3 or 4 inches of rich sandy soil kept on the bed by strips of board not much wider than the soil is deep. It is, of course, best to cover the soil with glass sashes, falling, which wooden screens, feeling stretched on frames, or, in fact, anything which will throw off the rain and exclude frost will answer admirably. Sow the seed during March, but before doing so the hotbed should have been made about a week in order to avoid rack burnish heat. Cover the seed thinly with soil, water when necessary, and throw off the covering upon every favourable occasion, in order to prevent the seedlings from becoming drawn up and weakened.

SEEDLING AUCUBAS (J.).—There is no determining the sex by the variegation or serration of the leaves. The coarsely serrated-leaved seedlings we think are mostly female, though in the smooth-leaved plants we apprehend you will have some female, but taking both together we anticipate the sexes will be about equally divided.

GROWING DANIELS, &c. IN POTS (A Great Lover of Flowers).—Dahlias may be put in pots, and, indeed, every description of plant. The best kinds for pot culture are the dwarf bedding varieties, as Bob Ridley, Leah, Baring Sun, Scarlet Gem, Down Queen, Cloth of Gold, Little Wonder, and Dwarf Queen. Of the Dwarf varieties—Glow-worm, Northern Light, &c. Webb, Sacramento, White Ash, and Little Love are good. They must not be allowed to become pot-bound, but be shifted into larger pots as required, giving the final shift at the end of May or early in June. Twelve or 18-inch pots are necessary. If you grow the Show and Fancy varieties they will require 15-inch pots. Hollyhocks must not be allowed to become pot-bound, and the plants may be put in potting pots at the end of April or early May. Plants with one stem may be grown in 13-inch, or with two or three stems in 15-inch pots. Antirrhinums do well in pots, requiring 8-inch pots, into which they must be placed in March or early April. *Chrysanthemums* should be struck from cuttings in March in gentle heat, and the plants well rooted, and then placed in cold frames in a cold frame until April or May, then placing on sashes in an open situation outdoors, shifting into larger-sized pots as required, keeping from becoming pot-bound, and moving into the blooming pots early in June, when the plants may again be stopped, affording 9-inch pots for Tomatoes, and 10 or 11-inch for the large-flowered. *Caryophyllus* and *Gloxias* cannot be layered in pots unless unnecessarily large. Layer from plants planted-out. Pentstemons may be grown well in 8 or 9-inch pots. Any very vigorous plants may have 10-inch pots. All should have an open yet sheltered situation, be well watered, and with liquid manure as usual, and the plants should be kept in the house until the flowers. We know of no means of distinguishing in the young state single from double-flowering plants of *Margiolds*. The strain is a bad one to have so many single.

PLANTING RIBBON BORDER (Idem).—Commencing at the back of the border—*Geranium*, *Ageratum*, *Tigetes* signata pinnata, and Best, and we would advise an oblong plant of *Pyrethrum Golden Feather*, or a dwarf silver-leaved *Cerastium tomentosum*.

PYRETHRUM (H. T.).—You had better write to Messrs. Carter for the information you seek. Mention the size of the ground and they will readily answer.

TWIN APPLES (G. B. C. Woburn, Beds.).—We have never seen this twin Apple before. The only variety possessing this character is the Cleator Apple, and we should like to know if you have seen us. We should like to know its history if you can supply it to us. The pale one is Cockpit, and the coloured one Moss's Incomparable.

DUNG HOTBED MAKING (R. G. M.).—We will commence with the dung fresh at the stable door. The first thing is to throw it into a close body to "sweat." Shake it over loosely and reject a portion of the mere droppings, for these take the most putrefying, and, moreover, expel a great deal of the material thus thrown together will in a week or so become exceedingly hot, and must then be turned completely inside out, and in so doing every lock or patch which adheres together must be divided. Water now regularly as the work proceeds, rendering every portion equally moist. After the mass has become so hot as to be added to the mass they may be so at the last turning but one. The heap ought now to be "sweet," a beautiful drawn from the very interior and applied to the nostrils will not only be devoid of impure smell, but actually possess a somewhat agreeable scent, similar to the smell of Mushrooms. Select spots perfectly dry beneath, or rendered so, exposed to a whole day's sun; but the more it is sheltered sideways the better, as starling winds, by suddenly lowering the temperature, cause a great waste of material as well as of labour. Some portable screens, therefore, are useful things for early work. The ground surface should be newly level. It is well also to fill most of the interior of the bed, after building it, half a yard in height, with any half-decayed materials, such as half-worn linings, fresh leaves, &c. This will in general secure it from the danger of burning, whilst it will also add to the permanency of the bed, for the Cucumbers roots will descend, and thus secure an indefinite amount of food during the winter. The bed should be secured as built let some litters mature be placed round the sides in order to prevent the wind searching it. As soon as the heat is well up, or in about four days from the building of it, the whole bed should have a thorough watering, and now water as usual, but do not close it up, and do not use a second and lighter watering may be applied, and now it will be ready for the hills of soil. Not knowing on what system you intend to train your Vines we cannot advise how to prune them. Buy our Vine Manual.

NAME OF FRUIT (*W. H. A.*)—Bezi Vast.

NAMES OF PLANTS (*Mary*).—*Sparmannia africana*. It is a shrub, native of the Cape of Good Hope. It is a greenhouse evergreen, requiring common garden soil with a little peat added, and is propagated by cuttings of the young shoots during April. (*Juno*).—*Stachys lanata*. (*F. Walker*).—We cannot name any plant from a dead flower. (*F. M. H.*).—We cannot name your *Dracena* from the leaf sent. (*F. H. Cumming*).—*Heliconia foetida*, (*Gardener*).—*Pteris orifolia var. cristata*. (*Roh.*).—The blue flower is *Agathis cespensis*. The other is insufficient for determination.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY AND BIRD NEWS.

We observe a show is advertised for Banbury. We are glad of it, as that part of the world is but poorly off for shows. With the influential names of the Judge and Secretary it should be well patronised.

This being the hundredth anniversary of the Bath and West of England Agricultural Society, the Committee have wisely determined to return to their birthplace. We hear the preparations are all in full train for the meeting. The Royal Counties will meet this year at Southampton, so we shall hope to find our Channel Island friends well to the front.

The malicious injuries wrought upon prize poultry have been very great of late. We know fully well that sometimes at a show in punning, basketing, or cleaning out, a wild bird will break or drop a feather or two; but it is remarkable that of late so many of these feathers have been plucked which have materially injured a bird's winning. For instance: Mr. P. Haines had a Light Brahma hen injured in her tail; Mr. Dean had his Golden-spangled Hamburg treated the same; and the first-prize Dorkings came back, too, from Kingston like little Bo-Peep's sheep—tailless; and now we hear that Mr. Norwood has his cup Black Poland cock come home minus a sickle.

The Bristol Show has again been a failure; nearly £100 to the bad, and Mr. Cambridge, on whom the loss alone falls, wishes all prize-winners to take their prize money minus 25 per cent. As this appeal comes round with a most gentlemanly and straightforward circular, we hope all who can afford to do so will take their three-fourths. Still Mr. Cambridge had no right to issue single-handed his schedule unless he was prepared in the case of loss, which he must have anticipated, to defray all expenses.

Eggs seem unusually plenteous this season, but broody hens are as scarce as ever. We hear of birds being sent for from far distant places to sit upon the spoiling eggs. It does seem a pity that no incubator has been manufactured to come within the price and accommodation of all. Some people we hear systematically make year by year a good trade from selling "a broody hen, nest, egg, and all" for 5s.

We regret very much to have to announce the death of another of our poultry friends. Mr. Ridpath died last week at his residence, Withington, Manchester. Although not so well known, perhaps, as many other fanciers, still all who knew him bear record of his kindness and perseverance in the good cause.

Fanciers of the real Indian Game, not those of the Malayan cross, who are really anxious to establish the breed in England and are willing to help on the work, will find a very ardent coadjutor in Mr. J. King, II, St. Aldate's, Oxford, who, being the Honorary Secretary of the Exhibition there, is always willing to advance the interests of uncultivated breeds. Those not feeling inclined to subscribe can at least guarantee entries provided there is a class.—W.

OUR DUTY TO OUR FOUR-FOOTED AND FEATHERED NEIGHBOURS.—No. 3.

BOY-CRUELTY is not the only cruelty which animals have reason to dread. In a sneaking underhanded way there is still much man-crueity in England. I heard of a man confessing to have trained his terrier pup to kill rats by first catching a rat and extracting his teeth, and then letting the puppy go at it. This was said not in any way of boast, but as a recommendation to a purchaser of the dog. The dog was bought and the man, a travelling hawkster, went on his way and escaped, I regret, prosecution. Then there is the man-crueity of the cock-fighting snook, the loathsome creature. There is also too much cruelty or unnecessary severeness in the breaking-in of horses. There is too great roughness, and beating and kicking too, of horses by stablemen, especially when the latter are the worse for beer. A dog will not, such is his dislike of the smell of wine and liquor, go into places where such things can be smelt. You cannot induce a dog to smelt a wineglass that has had wine in it. How much horses must dislike the smell of stale beer, as they have to connect heavy breath with stableman cruelty! Then there is the bearing-rein cruelty. The docking and cropping of horses has become unfashionable, and was given up because of that; not, I

fear, because of its cruelty. In olden days I have known a horse twice docked in order to shorten the tail to the taste, or want of taste, of the owner. Some of my readers may not know what docking is, but I have seen it done when a little boy I can tell them. See—blacksmith's shop. Blacksmith a huge, fat, scorbuto-faced man, always in liquor after dinner. He began with bitters before breakfast, glasses round at his favourite pot-house at eleven, a heavy soak with his dinner, and afterwards more and more. He, unlike Longfellow's blacksmith, never

"Went on Sundays to the church
And sat among his boys;"

he never

"Heard the parson pray and preach,"

but his shop was known to the ear before the eye saw it, from the loud rattle of some poor apprentice, or it might be some fidgeting horse sent to be shod. Well, the poor horse is brought to be docked. The hairs of the tail held back, the real tail laid bare, then the big shears descend, a piece is cut off, and instantly a red-hot iron is applied to the bleeding sore. Oh, the agony to the poor animal! and all done for no useful purpose, only for fashion sake. Plunging, writhing with pain, the poor horse is taken home. The result, instead of a tail to lash off the flies in summer, he had what looked like the inverted head of a tobacco pipe, of no manner of use whatever. Am I told all this is a thing of the past? Granted; but fashion not seldom takes a backward turn, and old fashions become new.

At any rate, the Rabbit trap of the gamekeeper is no thing of the past. Going his rounds the keeper sets his traps. He may not again go the same round for two days. Meanwhile a Rabbit sporting in the twilight is caught by the leg. The Rabbit is a very timid creature, and timid creatures are always very sensitive of pain. The poor Rabbit tears at the trap, deeper go its teeth, and they meet at the bone. Hour after hour, and perhaps many hours of agony follow. At every noise those fine trumpet-like ears revolve on their pivots—those ears made to catch every sound, and made to revolve so as to catch it more readily. At length the keeper arrives after many an hour, the Rabbit is dragged out of the trap, and then at last, at long last, its misery is over. In all the above cases there is cruelty. As to Rabbits, land in England has become so valuable that, except in that peculiar land unfit for anything save a warren, Rabbits perhaps ought not to be allowed to live, but they should be killed with as little pain as possible. Our duty to animals and birds is not hard to learn; we must not be overwhelmed by them, but they must be kept in due proportion, a proper equilibrium being maintained.

In the rural districts of France a proclamation has been posted on the signboards and at the corners of the roads headed with the arresting title, "Ministry of Agriculture." This placard warns the French farmer in brief but admirably chosen language to the following effect:—"Hedgehog: lives on mice, small rodents, slugs, and grubs, all animals hurtful to agriculture. Do not kill the hedgehog. Toad: farm assistant, destroys from twenty to thirty insects an hour. Do not kill the toad. Mole: is continually destroying grubs, larvae, palmerworms, and insects injurious to agriculture. No trace of vegetation is ever found in its stomach. Does more good than harm. Do not kill the mole. May bug and its larva or grub: mortal enemy of agriculture; lays from seventy to eighty eggs. Kill the May bug."

In regard to birds there has been much ignorance in the lower classes, particularly gamekeepers. As a rough rule it may be well to remember that though some hard-billed birds may do some harm, soft-billed birds, the eaters of insects, can only do good. In parts of Scotland where the gamekeepers have of late years had orders to destroy all hawks, owls, and other birds of prey, on the ground that they kill the young game, the result has been that field mice have increased to such an extent as seriously to imperil the annual crop, and where weasels have been all shot rats have increased disastrously. All should be kept in due proportion, and then a proper balance will be maintained. The killing of every hawk is a great mistake, the kestrel, for instance, feeding only on mice, and no better friend exists than the owl.

There is another animal that I plead for, the graceful squirrel, Nature's better Blondin, because he fearlessly walks the slack rope of the bending tree branches, while Blondin only waded the tight rope when high in air. We have all too many wild animals in England, let us be careful of the few we have left. The squirrel is the very personification of graceful agility; every movement is graceful, and his activity wonderful. On the ground one sees his full, bold, liquid eyes; ascending a tree pursued by a cat we see the little creature's activity in danger. Once safe how he turns, stamps his foot, and barks his defiance; and when going from tree to tree across the most slender branches we see the perfection of self-reliance. Then he always abounds when his natural food abounds—the beech nut; those he loves best and lives on. Sometimes gardeners complain of his depredations, but usually I think the squirrel bears the blame when he ought not. Just as in the house, it is "that cat" when a dish is broken or a more than usually toothsome viand

is missing, so when an apricot is gone here and there, or filberts by the handful are missing, it is always "those squirrels." Is it not sometimes "that gardening boy," who, although he is perhaps high up in his teens, has his school-boy love of fruit and nuts still in him? I seldom believe charges against animals, for it is so easy to blame them; poor dumb beasts, they cannot defend themselves. For "that cat" and "those squirrels" read "servants." One mischievous squirrel certainly do, and that is they bite off the early spring shoots from some trees, notably fir trees, and in a young plantation of these they must be destroyed, but in other situations they may be encouraged, for they will only be numerous when the beech mast is plentiful. I carry not the heart of that man who can enjoy shooting a squirrel. If the deed must be done it must, but many a man I believe commissioned to kill squirrels regrets that he has to do it—almost wishes his gun may not point true for once, and if the little graceful creature falls, says pitifully, "Poor pretty little thing!" I know of no animal that resembles the squirrel; it stands alone as what I have called it, "Nature's better Blondin."—WILTSHIRE RECTOR.

PREPARING POULTRY FOR MARKET.

POULTRY should not only be fat when killed, but should be properly dressed and put up for the market. Poor goods may not sell because they are presented in an attractive form, but the best will not bring good prices unless they attract by their appearance. After the fowls are killed comes the most exacting part of the work of preparation. The skin must not be broken, it must not be parboiled, pin feathers must not be left in, nor the down stand out like the first whirl furze on a boy's face. To prevent these unsightly and repulsive appearances follow a few simple and natural directions. Pluck the fowl while the animal heat still remains. Do not kill at a time more than you have facilities for immediately dressing. The use of hot water is certainly essential, but do not have it hotter than is absolutely necessary in order to start the feathers. Pick out all the pin feathers, using tweezers if necessary, but do not tear the skin. Singe the plucked fowl over a gas jet or the flame of a kerosene lamp; in the latter case it is sufficient to hold the fowl over the glass chimney of an ordinary kerosene lamp, turning the fowl rapidly. The work may be done in a few seconds. Some prefer a handful of feathers or a few scraps of paper kindled to a quick blaze to the fireplace or stove.

In some markets poultry is sent with crop and intestines undisturbed, probably as much because it is thought the fowls look fairer and plumper as for any hope of gain from extra weight. It is preferable on some accounts to draw the fowls. The French market women draw their poultry, carefully wipe out the cavities, and stuff with a bunch of clean unsized paper—ordinary straw or Manila paper, and their poultry is delightfully sweet and attractive.

Poultry should not be packed for transportation until entirely cold. Then it should be laid in clean straw, breast down, keeping the wings and legs close to the body. See that there is no discoloration of blood on the skin. If the heads are removed pull up the skin of the neck, and tie it over the severed portion with a bit of strong thread or twine. Never cut off the spurs of old hens or cocks with the idea of passing them off for young chickens. Purchasers are generally older than the most ancient specimens of your poultry-yard; or if perchance the customer is green, that is no excuse for dishonesty.—(*Canadian Poultry Journal*.)

CRYSTAL PALACE BIRD SHOW.—The fourteenth annual Exhibition of Cage Birds is fixed for the 17th to the 22nd of February inclusive, and promises to be more attractive than ever. For foreign birds especially the amount of prize money has been doubled in most of the classes, and the prizes offered throughout the schedule no doubt will bring forth large entries. There are no less than eighty-six classes for birds, a class for cages, another for the best collection of nest boxes for cage and wild birds. Class 90 provides space for authors, publishers, and booksellers who may think well to send books relating to cage birds. This we look upon as a novelty in connection with bird shows. The entries are to close February 2nd, and post entries February 10th.

THE BEES IN JANUARY.

As we all know the winter has been with us exceedingly mild it is natural to suppose that the bees may have declined to an abnormal condition, and it will be well, when an unusually warm day occurs to investigate the state of the hives and their inhabitants. On January 3rd the sun shone bright; the bees were full of life and activity, so I made an examination of my colonies. The first frightened me—to my surprise not an ounce of honey was in the hive. In fear and trembling I opened the remainder one after another, gaining spirits as I proceeded, for the first was the worst. Several others were poverty-stricken, but none

so bad as that. I saw the queens of all the hives, some of which had babies in their cradles; so into a stewpan went 8 lbs. of lost sugar, which, being boiled into barley-sugar and broken up, was soon distributed among the paupers, as well as some full combs of honey-gleaned from richer colonies which could spare it.

Now it is not easy to persuade bees to take food into their hives in winter, and my barley-sugar in No. 1 colony was merely sniffed at; but a half-full honeycomb put right into the brood nest soon brought the bees' pluck up, and a week afterwards I found the barley-sugar gradually disappearing, and still a week later found breeding in progress, one fed hive having a patch of sealed brood as big as the palm of my hand. So far so good; and every week of mild weather following gives a better chance of surviving until the spring, for in another month, unless very cold, breeding will actively commence and food will readily be taken from the bottle, when all danger will be over. If January had been as we might have expected it, very cold, one at least of my colonies would have perished, which of course should have fairly been set down to bad management; but my investigation seemed to tell me that the bees had consumed more food than is usual in winter, by reason doubtless of their greater activity, the semi-dormant state in very cold weather not having occurred.

I cannot help rejoicing that I do not patronise straw skeps, for in that case no such examination and relief as I made would have been possible. But

"'Tis with our opinions as our watches—none
Go just alike, but each believes his own."

I have no hives to sell, and should prefer every bee-keeper would please himself and let others do the same.—JOHN HUNTER, *Eaton Rise, Ealing.*

HIVES AND LOCALITIES.

YOUR correspondent Mr. Pettigrew, in a communication under the above heading, gives in his adhesion to the theoretic views enunciated by Mr. Lowe in an article entitled "The Battle of the Hives." Mr. Pettigrew's change of front is indeed thorough. Since he came amongst us we have heard much of the great harvests of honey reaped in and through his large straw hives. To prop up Mr. Lowe's position all this teaching is thrown overboard; for does not Mr. Pettigrew now unhesitatingly proclaim it matters not of what material and how constructed hives are to expect any increase of the honied store? Even his large pot straw (the Crystal Palace bar-farms prize) and the Stewarton all are reduced to the common level of "the boxes from a grocer's shop." Mr. Lowe thought rather cautiously "that the kind of hive cannot have much or any influence on the amount of store collected by the bees;" but Mr. Pettigrew, anxious to outvie his leader, loudly disclaims thrice over—"No, nothing" of gain.

How evanescent are the teachings of theory when brought to the test of experience. I have already shown Mr. Lowe from my own apiary the honey results from one hive during all the years of its establishment to be simply *nil*, the untoward state of matters being solely attributable to its "form, material, and construction;" and in like manner I can assure Mr. Pettigrew that the superior results obtained from one hive and system of bee management over another is by no means an "isolated," but a most common experience. This I can illustrate over and over again. Take the case of the ten supers obtained from one colony in 1868. When I spread them out for the inspection of the most extensive and experienced straw-hiveler in our neighbourhood, he had the candour as well as the frankness to tell me that from that one colony I had reaped that season more honey than he from his entire apiary. To be sure I had one advantage over him in possessing the Italian bee, in addition to the improved hive; still this same stock yielded a greater crop than did all the straw skeps in my own apiary put together, although similarly peopled. To go no farther back than last year: while "the best hive," my strongest Stewarton (No. 7), yielded nine supers in all; No. 12, an eked straw skep, gave neither swarm nor honey, refusing to ascend into the glass. No. 9, another eked straw, gave one artificial swarm and stored 13 lb., sufficient to seal-out and make presentable to send to a friend the Abingdon glass, wrought on No. 11 the competitive straw of 1875. No. 7 gave two swarms and reaped all supers, so that against the nine supers from one Stewarton I had last season 13 lb. of honey and three swarms from my three straw stocks; but fortunately they were equally with the Stewarton, a rather unusual circumstance, independent of all feeding.

Mr. Pettigrew states that Mr. Phillips of Hitchin has told me he reaped last season the harvest of 154 lbs. from a straw skep, and adds—"In Lanarkshire and other parts of Scotland swarms in straw hives, and the stocks that yielded them in 1875, rose to 70 lbs. or thereabouts, whereas the straw hive of your Kenfrewshire correspondent, which never swarmed at all, was at starvation point after the super of 20 lbs. was removed." And may I ask, What does this go to prove? Simply what a land of Canaan the counties of Hertford and Lanark must be to the comparative desert wilderness in which our camp is pitched. The strict

inquiries after the health of our competitive straw has amused us not a little, for was it not the premier straw hive of our apiary? and were we not a little proud of the heaviest and best glass of honey we ever harvested which it yielded, when our other straws, equally healthy, gave nothing, and less than nothing? they and their swarms requiring to be heavily fed early in the season, while with our neighbours, where this had been neglected, the bees were dead and dying all round. Such a weight as 70 lbs. with a single swarm in our poor district we have never seen, clearly demonstrating the necessity we have already pointed out for comparison being drawn on a common scale. It also proves the thorough efficiency of the Stewarton implement we possess for our miserably watery west coast. We cannot here afford to subdivide our forces; we must combine them to improve each blink of sunshine, and when favoured with a genial spell is it not surprising the feats their conjoined numbers can perform? which, according to Mr. Lowe, even "staggered" the faith of our friend Mr. Pettigrew in the straw, which the former gentleman's plausible theory has now altogether overturned.

Mr. Pettigrew descants "on the condensation of moisture on the inner side of wooden hives. . . . and hopes that a cheap and satisfactory mode of ventilating wooden hives may soon be discovered and made widely known." He says, "The quilt, an American idea, has been tried in this country without success, so far as I know." This evil is unknown in our apiary, either in hives of wood or straw. Your correspondent, possibly being in ignorance of what our old job testifies, that sixteen years ago, when this periodical led the van of apianism thought, that the present writer proved how that by the employment of India or Cuba matting, a hive—not of wood only, but of glass—was so thoroughly ventilated as to withstand a frost within the hive on the memorable morning of the 24th of December, 1860, and came through dry and in fine order; and how the first authority on the American continent, Rev. L. L. Langstroth, subsequently approved and recommended the same material as being thoroughly efficient for such a purpose.

It may interest Mr. Pettigrew's Cambridgeshire correspondent to know that my favourite hive, the Stewarton, so far from being lauded, was not so much as mentioned in any work I could procure on my beginning bee-keeping, its fame being then merely local; and it has been brought into notice principally through the present writer's pen in these pages and elsewhere when an amateur's recommendation to his fellows, who never had the smallest personal interest in any hive whatever. The superiority of its results, in quantity as well in quality, were seen to advantage on the first and second prize displays at the Great Exhibition of the British Bee-keepers' Association at the Crystal Palace, when the leading journal pronounced "that the Scotch honey eclipsed everything."

How often do we find parties, possibly denized in the environs of towns, lay the blame of their failure in bee-keeping on their locality, when a glance at their hives would lead to the supposition that their intention was to cramp rather than stimulate the industry of their bees. Some years ago a Greenock acquaintance, Mr. B.—, sought my opinion as to the feasibility of his setting up a hive of bees in the centre of his villa garden situated at the top of a populous street, which, with his little greenhouses to one side, he thought would then be complete. Were the bees to turn out self-supporting in summer he would not grudge as much sugar as would feed them over the winter, and then in a special good year, could he but get a bit of honeycomb for his table, what a treat it would be! After discussing the distance of surrounding foraging grounds I thought it worth a trial. His idea of a hive was one in which he could see the bees at work, in which they could be prevented from swarming—for his being absent in town all day the swarms would be lost, but he could devote time morning and evening to looking after them. I recommended the Stewarton hive, and gave him the address of a maker and of a cottager in our parish who supplied a prime swarm. The stock was set up in an ornamental octagon cover, back portion hinged; he wrought under my directions, and it proved a much greater success than either of us could have anticipated, even to the extent of his harvesting one good season six octagon supers. In course of time the first octagon stock became flanked by one on either side, and he not only supplied his own table to satiety, sweetened all his friends', but actually sold honeycomb. His great success ultimately proved his ruin. Gentlemen who kept bees more in the country twitted their gardeners as to how they could not supply their tables with equally beautiful comb from their straw skeps. Some maliciously-disposed person during the night entered my friend's garden, and robbed and utterly wrecked all his colonies.

I was recently introduced to an apianist in the same town; among other things the peculiarities of last season were discussed, and in such a locality as his bees could not be expected to do much. What hive did he find field meet? The Stewarton to be sure. What had been considered his "best" hive came next. Such a year three full-sized supers, instanced Mr. B.—'s six supers same year. He had heard of that case, but there was

something mysterious about it he could not comprehend, for were not their gardens close to each other? The mystery was soon solved. What depth of box do you use? 9 inches was the reply. How many of these constitute your set followed? Of course, one; to which I rejoined, "Your workshop of but one 9-inch box gave elbow-room to a given number of willing hands; Mr. B.—'s, at 18 inches of breeding space, to double your number. Your force turned out three, all you could expect; his, six full-sized supers." Such is the beautiful exactness with which honied results are proportioned to the construction of hives placed on a common field.—A RENFREWISH BEE-KEEPER.

OUR LETTER BOX.

ELEPHANTIASIS IN FOWLS (Rooster).—The first appearance of elephantiasis (St. Anthony's fire), is the formation of a sort of white crust at the edge of each scale of the leg. At this stage we have known it cured by frequent administration of sweet oil by means of a feather, or by constant application of ointment. If afterwards increases, penetrates beneath the scale and raises it, filling the space with white crust. This increases till the legs even of a young fowl resemble the upper shell of a coarse oyster. We know no cure for it in this state. It, nevertheless, is not a disease from which fowls suffer either pain or inconvenience. We have only known it among fowls in confinement. In a large pen where some have had it, we have never known it affect all the birds. As a rule it attacks adults, but we have known chickens catch it. The ground oats can be made only with stones dressed on purpose. Ordinary grinding is worse than useless.

EDINBURGH COLUMBARIAN SOCIETY'S EXHIBITION.—Mrs. Iadd writes to say that some of her prize Pigeons have been injured and lost during their return homewards. The baskets to pass through so many hands between Edinburgh and Cairn that it will be difficult to detect the culprits.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 4" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rubb.
	Barom. at 30 in. above Level.	Hygrometer.		Direction of Wind.	Temp. of Air.	Shade Temperature.		Radiation Temperature.	
Jan. and Feb.	Dry.	Wet.		Temp. of 5 fathoms.	Max.	Min.	In sun.	On grass.	In.
We. 31	30.068	35.9	84.0	N.W.	deg. 43.6	deg. 39.3	deg. 59.0	deg. 59.3	0.078
Th. 1	29.973	37.0	85.0	N.W.	deg. 40.0	deg. 35.5	deg. 56.5	deg. 56.2	0.111
Fri. 2	29.974	50.0	49.2	S.W.	deg. 41.6	deg. 35.8	deg. 48.2	deg. 55.5	0.079
Sat. 3	30.245	33.0	87.7	N.W.	deg. 42.3	deg. 35.7	deg. 55.5	deg. 55.5	0.018
Sun. 4	30.245	33.0	87.7	N.W.	deg. 42.3	deg. 35.7	deg. 55.5	deg. 55.5	0.018
Mo. 5	30.316	39.4	84.0	N.W.	deg. 45.0	deg. 49.7	deg. 52.5	deg. 51.0	0.018
Tu. 6	30.252	48.5	49.0	W.	deg. 42.0	deg. 34.6	deg. 56.6	deg. 56.4	—
Means.	31.155	48.5	48.0		deg. 43.5	deg. 41.1	deg. 63.6	deg. 63.7	0.041

REMARKS.

- 31st.—Fine morning, solar halo between 8 and 9 A.M.; fine till the evening, when the rain and the evening was again rain.
 1st.—Dull and damp all day, but scarce any rain.
 2nd.—Neither sun nor rain all day; stars very bright at night.
 3rd.—White frost in morning, fine forenoon, rather less bright in the afternoon; fine evening, and starlight night.
 4th.—White frost followed by a fine bright day, brilliant sunset, and starlight night.
 5th.—Slight white frost, fine morning and fair till 5 P.M., when it began to rain and the evening was showery.
 6th.—A damp, dull, disagreeable day; rain at intervals during the day, and more heavy at night.
 Very mild, ad., excepting on the 31st, somewhat drier than for some weeks past.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 7.

We have no alteration to report from last week.

FRUIT.

Apples..... sive	6. d.	s. d.	Oranges.....	½ 10	6. d.	s. d.	
Currants.....	4	0	4	Pears, kitchen.....	do.	1	0
Fibers.....	lb.	0	0	0	do.	8	12
Gobs.....	lb.	2	0	0	Pine Apples.....	lb.	2
Grapes, both kinds.....	lb.	2	0	0	Strawberries.....	bushel	0
Lemons.....	½ 100	6	10	0	Walnuts.....	bushel	6
Melons.....	each	1	0	0	ditto.....	½ 100	1

VEGETABLES.

Artichokes.....	dozen	6	d.	0	do.	0	0	Mushrooms.....	pottle	6	d.	0
Asparagus.....	½ 100	8	10	0	0	0	0	Mustard & Cress	punnet	0	2	4
French.....	bundle	0	0	0	0	0	0	Onions.....	bushel	0	0	0
Beans, kidney.....	½ 10	1	0	1	6	0	0	Peas.....	doz. bushels	0	0	0
Beet, Red.....	dozen	1	8	3	0	0	0	Parsley.....	doz. bunches	2	0	0
Broccoli.....	bunch	0	3	1	6	0	0	Parasiti.....	dozen	0	0	0
Brussels sprouts.....	sieve	8	0	4	0	0	0	Pickling.....	quart	0	4	0
Cabbage.....	dozen	1	0	2	0	0	0	Potatoes.....	bushel	2	0	0
Carrots.....	bunch	0	4	0	8	0	0	Kidney.....	do.	8	0	6
Cauliflower.....	dozen	1	6	0	0	0	0	Peas.....	doz. bushels	1	0	2
Celery.....	bundle	1	6	0	2	0	0	Radishes.....	bushel	2	0	0
Coleworts, doz. bunches	2	0	4	0	0	0	0	Rhubarb.....	bundle	0	1	6
Crombards.....	bunch	1	6	0	4	0	0	Salsify.....	bundle	0	1	0
Endive.....	dozen	1	6	0	4	0	0	Scallops.....	bushel	0	0	0
Fennel.....	bunch	0	3	0	2	0	0	Seakale.....	basket	1	6	2
Garlic.....	lb.	0	8	0	0	0	0	Shallots.....	lb.	8	0	0
Herbs.....	bunch	0	8	0	0	0	0	Sprouts.....	bushel	0	0	0
Horsradish.....	bundle	0	0	0	0	0	0	Tomatoes.....	sieve	0	0	0
Lettuce.....	lb.	1	0	0	0	0	0	Turnips.....	bunch	0	0	0
Leeks.....	bunch	4	0	0	0	0	0	Vegetable Marrows.....	do.	0	0	0

WEEKLY CALENDAR.

Day of Month Week.		FEBRUARY 15—21, 1877.		Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day	Month	Day	Time	Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
15	Th	Royal Society at 8.30 P.M.		45.3	31.2	38.8	7 16	5 19	7 55	7 45	2	14 23	46
16	F	Geological Society (Anniversary) at 1 P.M.		46.3	30.4	38.4	7 14	5 15	8 6	8 57	3	14 19	47
17	S			43.9	30.5	37.2	7 12	5 17	8 17	10 12	4	14 15	48
18	SUN	1 SUNDAY IN LENT.		45.0	30.6	37.8	7 10	5 19	8 28	11 29	5	14 10	49
19	M	London Institution at 5 P.M.		46.6	30.7	38.6	7 8	5 20	8 43	noon.	6	14 4	50
20	Tu	Zoological Society at 8.30 P.M.		45.1	30.3	37.5	7 6	5 22	9 4	0 50	7	13 57	51
21	W	Society of Arts at 8 P.M.		46.2	31.9	39.1	7 4	5 24	9 54	2 13	8	13 50	52

From observations taken near London during forty-three years, the average day temperature of the week is 45.6°; and its night temperature 30.8°.

WHEN TO GIVE AIR, AND WHY.



WHO dares say anything against the time-honoured "chink of air" insisted on by so many first-rate gardeners? It would seem at first sight to be almost madness to do so, and at the same time to own that probably the greatest number of successes are to be found at present where the said chink is held in great veneration. Nevertheless I say unhesitatingly that the necessity for the chink of air on forcing houses night and day in winter is only an imaginary one, and to keep it on regularly is extravagance.

As a general rule, houses which have their roofs constructed principally of glass do not require opening at all so long as the atmospheric temperature has to be assisted by fire heat. Those who recommend a constant chink of air imagine it is necessary for the sake of supplying the plants with fresh air, and this idea when looked at in the right light is altogether an absurdity, and will only become reasonable when our glass fittings are made air-proof. Imagine a forcing house at 70° while the outside temperature is 30°! A good arithmetician could tell you how long it would take, if shut as closely as possible, to change its air entirely. I have not the least idea of the length of time it would take, but certainly not many hours, and of course with a greater difference between the two temperatures the more rapid would be the change; consequently the less need would there be to open the ventilators. Anyone who will look at the matter for a moment will see that it takes at least four times the amount of hot-water pipes to heat a forcing house that it would to heat a dwelling house to the same temperature; and again, a forcing house well covered or double-glazed will take a third less fuel than it otherwise would to keep it up to the required temperature. All this goes to prove that in an ordinary forcing house when the outside temperature is low the change of air is sufficiently rapid for the good of the plants.

Not only is fuel wasted by giving air when the plants have already a sufficiency of it, but the tissues of the plants are dried up, and they become an easier prey to insects. I know there are people, and good gardeners amongst them, who will scarcely credit that it is possible to force Kidney Beans, Strawberries, &c., in winter without red spider. Let all such banish their old notions about giving the constant chink of air and high artificial temperatures, and they will find that it is easier to go on without this and other pests than it was with them. By-the-by, I find high night temperatures, the venerable chink of air, and a plague of insects keep company very constantly. I have often been at a loss to understand how so many of our good gardeners will insist on a high night temperature and declare that their plants will not exist under the conditions, and often name, say, for instance, 55° for Cucumbers and Vines in full growth. Now I think the chink of air must have something to do with it. We know that we may feel quite comfortable as to warmth

at one time with the thermometer at 40°, but an east or north-east wind will speedily deprive us of that comfort, though the thermometer may declare the temperature to be 55°.

When and why is it necessary to open the ventilators?

1stly, When there is not sufficient difference between internal and external temperatures to cause circulation and consequent renewal of air.

2ndly, When blossoms are expanded which require fertilisation, a more rapid circulation than usual is necessary to dry and distribute the pollen.

3rdly, When there is a likelihood of the temperature rising too high or too rapidly from natural causes (not after it has risen, mind); the rising must be anticipated).

A rapid rise of temperature does not harm many hot-house plants, excepting they are bearing fruit or flowers, when, owing to the fruit and flowers not being warmed so quickly as the surrounding air, moisture immediately condenses on them, and is very injurious. The same cause produces damping or fogging-off with small or tender plants. If the temperature rises rapidly while the soil is comparatively cold condensation takes place on the surface and speedily affects the stem where it touches. A low temperature, even when approaching a frosty one, is not injurious of itself to ripe Grapes; but when the natural temperature rises suddenly while the Grapes are still cold and condensation takes place on them, as was so well explained by "A NORTHERN GARDENER" recently, injury very soon follows. The only safe plan is to just keep the pipes from becoming entirely cold and to run as if for your life to open the ventilators when the sun is likely to show itself.

Keeping a regular temperature of 40°, 50°, or any other fancied height is all nonsense. You cannot do it. If the outside air is 55°, your vinery with ripe Grapes must be 60°, or the fruit will soon rot from damp. Heating and ventilation attended to, the amount of moisture in the house is of little consequence. We are still (February 5) using Hanburgh Grapes which have been kept in a house with thousands of bedding plants which received an abundance of water two or three times a-week all through the worst winter months perhaps ever experienced. I must not, however, take too much credit upon myself for this, for a great deal belongs to the country,—Wm. TAYLOR.

THE WHITE LILAC,

AS PREPARED AND FORCED IN FRANCE.

The white Lilac, which is extensively used in the formation of bouquets in Paris from the month of October, has been an object of much interest. The cultivation of this shrub, the colour of which is lilac when grown naturally in the open air, appears a mystery to many who are not initiated into the secrets of horticulture. It is, however, quite simple and practicable even for modest amateurs.

The Lilac Charles X. is preferable to all others for this mode of culture; it alone is employed for this special culture. Take up in autumn a clump, or only a part,

according to the quantity required; pot all the shoots which in dividing the clump have good fibrous roots, and which especially shall have a head, or branches likely to make one. Place these to a foot long, or as much as is enough for the shrub to be sufficiently strong, and not too large, when in the following year it is to be placed in the forcing house. The subsequent pruning is to be regulated so as to form a handsome head to the plant. The plants are to be placed in a cold house or pit during the winter; afterwards they are to be plunged in the open ground, and attended to by shading and watering them, in order to secure good heads. At the end of August when they shall have finished growing select all those that are well set with blossom buds, and which it is intended to force; put them in a shaded place and suspend watering them so as to ripen the wood, and when the soil in the pot is quite dry and the wood has begun to shrivel, then is the time to begin forcing.

Place the pots on the floor in a corner of a stove or under the stages where they will be completely shaded, water them abundantly, and be careful to keep up the heat at not less than 70° to 80° to insure success. Those who specially cultivate this plant do so by thousands. Many nurserymen grow them to supply amateurs, and we think that those who wish to have those magnificent shrubs in flower a year earlier would do well to purchase them; they will then see in what state they are, and that will be a guide if they wish to experiment for themselves in the following years.

As to the shoots which are not sufficiently rooted to fit them for potting, they should be planted out and grown-on for use the next year.—(*Le Moniteur d'Horticulteur*.)

ROYAL HORTICULTURAL SOCIETY.

FEbruary 13TH.

THE Annual General Meeting of this Society was held last Tuesday in the Council-room, South Kensington, Lord Aberdeen, the President, in the chair. The members of Council present were Lord Alfred S. Churchill, Dr. Denny, Mr. Henry Webb (Treasurer), Dr. Hogg (Secretary), Mr. Haughton, Mr. Kellock, Major Mason, and Mr. Campion. Amongst the general body of Fellows were Mr. Edgar Bowring, C.B., Mr. Guedalla, Mr. G. F. Wilson, Mr. G. T. Saul, Mr. Shirley Hibberd, Mr. Godson, sen., Mr. De Castro, Mr. David Wooster, Mr. John Fraser, Mr. P. Liggins, Mr. H. Veitch, Mr. Maurice Young, Dr. Masters, Mr. H. J. Elwes, Mr. B. S. Williams, Mr. Arthur Grote, Mr. John Lee, Mr. Tweedy, Mr. Bateman, &c.

Mr. DICK (Assistant Secretary) read the minutes of former meetings, which were approved, and signed by the President.

Messrs. H. VERRON and J. LEE were appointed scrutineers for the ballot of members of Council and officers of the Society. The Report of the Council having been taken and read.

THE PRESIDENT said: Ladies and Gentlemen—Those who remember their Horace will recollect how a thousand lines were spoken by a poet standing upon one foot, and as the President of this Society I ought not to shrink from making to you a few observations in the same unfortunate position [alluding to the effects of his late accident]. You will all have read with satisfaction a statement in the Report of the actual work done towards the advancement of the science of horticulture. I draw special notice to that because the Council, like the rest of the Fellows, have read the disparaging remarks which have appeared from time to time as to the proceedings of this Society. Undoubtedly the unfortunate circumstances which have been the subject of so much conversation in this room have had to some extent a prejudicial effect upon the position of the Society. It is undoubtedly true a large portion of the funds, which might have been devoted to the advancement of horticultural science, have necessarily been applied to the maintenance of these gardens at South Kensington. It is true that the Journal of the proceedings of the Society, which all who are fond of horticulture have read with the greatest possible interest, has been discontinued; and there is no question that the connection of the Society with the South Kensington Gardens under the modern phase which it has unfortunately taken during the last two or three years has been prejudicial to the interests of the Society. This subject has been made one of unjust comment on the consequences of that union. It is not for me to defend it. It was proposed many years ago and advised by the late Prince Consort on the one hand, and by Dr. Lindley and other most earnest supporters of the Society on the other. There was a hope that the effect of this union would be to popularise science to a very great extent, and I cannot say that in my opinion those anticipations have been realised [hear, hear]. I doubt whether they were realised at the time when the Society was most prosperous, because I think what prosperity meant was a large number of subscriptions from South Kensington and the enjoyment of the pleasures and advantages of these gardens [hear, hear]. But

when you bear in mind the fact that you obtain 47,000 plants a-year from Chiswick for these gardens, you must not conclude that the reputation of the Society must be gone in a scientific point of view; but we must all feel that, having entered into this union, it was impossible lightly or easily to withdraw from it. In the first place it was absolutely necessary for us, as men of honour and principle, to do our utmost to give effect to the intentions of those who brought about this union. Even supposing there had been a failure of the object in view, there was still a sense of honour to be felt towards those who had advanced large sums of money in the hope of the concern or the union being a prosperous one [applause]. There were some persons who advanced nearly the sum of £50,000 on debentures, and there were also life-ticket-holders who paid down their money and whose claims could not be repudiated. It was thus the duty of those who had in their hands the management of the Society to do, while there was a vestige of hope left, their best for the general welfare of the Society, and to secure the interest coming due to the debenture-holders and to the life-ticket-holders. Well, you are all aware of the result of all this. We are now under a special lease for three years, during which time we cannot be extinguished. At the end of these three years, in the event of the annual sum of £10,000 not being raised, Her Majesty's Commissioners will be in a position to extinguish the Society.

Mr. W. HAUGHTON.—If the amount of one only be not £10,000.

THE PRESIDENT.—Well, we must show we have obtained subscriptions to the amount of £10,000. All we received from all sources last year was £5800, and you can judge for yourselves the amount of effort that must be made to secure the sum which is now required. It may be thought that the attempted absorption of the gardens by Her Majesty's Commissioners may lead to increased efforts so as to enable the Council to carry out their desire to promote the real objects of the Society both at Chiswick and South Kensington. If not, you will see that it is utterly impossible for the Society to continue in its present position. How can we remain as tenants bound to pay £2500 a-year which we cannot pay? When we have a burden of £2000 a-year, which ought to be paid to the debenture-holders, what use is it for us to remain here, when during the last year we were unable to keep up the gardens in a proper condition, when we had to cut down all our expenses and close all the entrances to the gardens but one? I think you will feel with me and the Council, that is not a befitting position for this Society to be placed in [hear, hear]. It is not right or proper that this Society should be constantly exposed to the charge that it is endeavouring to maintain a position it cannot maintain. If a man finds himself over-spending himself, it is his duty to make his income and his expenditure balance, and to give up every source of unnecessary expenditure. It is equally the duty of this Society to endeavour to square its expenditure and receipts by abstaining from trying to support and keep up gardens like these for which an adequate income is not provided [hear, hear]. I have stated here on former occasions, and I am glad to state it again, that having, by the assistance of the Commissioners, taken the Society from a state of debt and bankruptcy, I think it my duty to endeavour to keep the Society from incurring further debt. During the next two years we shall not, I am sorry to say, be able to keep the present gardens up to their former condition. We shall, I am sorry to say, be obliged to refrain from many things we would like to do for the extension of horticulture, but I think our great object during the next two years should be that the Society should not suffer in credit by entering into pecuniary liabilities it cannot discharge [hear, hear]. I wish you to understand that only for Her Majesty's Commissioners were should be involved in very heavy debt. The sum of £5000 advanced by Mr. Frake has been spent in discharging our debts, and you will agree with me that it is our duty to prevent the Society from again running into liabilities they have not the prospect of discharging or of getting any assistance towards discharging from the Commissioners. My view of the question is this, that unless the public generally, and especially in this neighbourhood, exert themselves to put us in a position to raise the annual sum of £10,000, it is impossible for us to meet our ordinary obligations; and I then think that the union between South Kensington and Chiswick ought to be discontinued at the end of three years. That is a fair notice, which ought to be clearly understood. I am glad to find the Report of the Council in its concluding sentence puts their position in clear language. With these observations I beg to move the adoption of the Report [cheers].

Mr. SHIRLEY HIBBERD wished to call attention to the balance-sheet. They should have had in their hands that day a full statement of accounts than that they had been furnished with. The balance-sheet did not include the £5000 received as a loan from Mr. Frake, and they had no account with respect to a sum of £1800. He should like to ask the Treasurer how it was that he had put in the hands of the Fellows such a statement of accounts as rendered it almost impossible for them to proceed with the business? Some years ago it was determined to

hold exhibitions in the provinces, but a Finance Committee, representing Her Majesty's Commissioners and the Council of the Society, determined that the Society's funds could not be applied to exhibitions in the provinces. Finding themselves in a difficulty the Society provided a fund of their own which came out of certain private pockets, sometimes in the shape of guarantees and also in the shape of earnings from distant places. The last exhibition at Bath left them in possession of £2000 altogether solely to be devoted to the promotion of exhibitions in the provinces. It was stated in the circular issued by the Council that these provincial exhibitions would be resumed; but now they had no money to carry them on. In 1873, Viscount Bury being then Chairman of Council, a sum of £1800 was borrowed from the provinces and transferred to the general funds of the Society, and in that very same year £1900 was paid in interest on debentures; so that the separate horticultural funds were turned to account to pay off interest on the debentures. But that should have been paid out of the surplus profits of the Society. The Society had no business to touch that money. He should like the Treasurer to tell them something of this missing £1800, because it should really be paid back to the horticultural funds by this time, so as to enable the Society to look forward to provincial shows with some prospect of success.

Mr. HENRY WEBB (Treasurer), said he thought Mr. Hibberd had answered the question about the £1900, for he told them it had been spent [a laugh]. He deemed it an improper thing to have taken the money from that fund, but it was done before he was Treasurer. There was a large sum of life-composition money taken, and he regretted very much it had been done, because, if it had not, they would have been able to go on without borrowing this money from Mr. Freate. Ever since, as by the Charter they were obliged to make the money appear from year to year in the balance-sheet, it rendered the balance-sheet to that extent inaccurate and misleading. There was no such fund, and in the accounts it appeared that they had a larger sum in revenue than they actually had. He regretted the balance-sheet had not been made out until the present moment.

Mr. HIBBERD asked the Secretary if he could furnish the meeting with a copy of the minute under which the money in question was improperly transferred.

The PRESIDENT.—All these proceedings took place before the existence of the present Council. They appeared in the accounts. It may be a subject for animadversion, but I cannot conceive what advantage can arise from discussing statements of accounts which have already appeared [hear, hear]. I think Mr. Hibberd has received a very clear and full answer as to this unfortunate sum, and no advantage can arise from reopening a question so long in abeyance.

Mr. GUEBALLA thought with Mr. Hibberd that a better statement of accounts ought to have been submitted to the Fellows.

The PRESIDENT.—I quite agree that fuller accounts ought to have been furnished.

Mr. GUEBALLA.—We should have received a printed statement of accounts. He should like to ask the Chairman how subscriptions were coming in, so they had heard so many reports on the subject. It would be well if the Fellows had some statement on the subject, as it might induce people to make an effort to increase the income of the Society.

The PRESIDENT.—I am happy to announce that we shall, in the course of this day's proceedings, proceed to the election of thirty-nine new Fellows [hear, hear].

Mr. H. WEBB.—And a great many of those who have withdrawn from the Society are coming back to it again [hear].

Mr. GUEBALLA said the noble Chairman had so clearly laid down their position, that he thought it best to go on and await the chapter of accidents. He should with pleasure second the motion for the adoption of the Report.

Mr. GODSON, sen., asked what would be the result if the £10,000 was paid in? In that case, what arrangement was there with the Commissioners?

The PRESIDENT.—I am glad you asked that question, because it is a very important question, and a full answer ought to be given to it and clearly apprehended by all persons present. Supposing the conditions of the lease are fulfilled by our raising the revenue to £10,000 a year and paying an annual rent, it will be impossible for the Commissioners to put an end to the lease, and it will be our duty to continue the connection; and, for one reason among others, that that is the only chance that the debenture-holders have of receiving interest on their £50,000. So long as the Society receives a sum over and above the cost of maintaining the gardens, that sum should be paid to the debenture-holders; that is their sole right. The only legal right to the payment of the capital arises from two sources. One is—if at the expiration of the lease in 1891 the Society fulfils all the conditions of the lease, and the Commissioners then choose to extinguish the debt, the Commissioners will be bound to pay one half the debentures. That is one half. The other half is by putting aside excessive receipts over the payment of the interest due to the debenture-holders during the continuance of the

lease and over the annual interest. A part of that excess is put aside to redeem the capital of the debenture-holders. I do not say that the second part of that will carry very much comfort to the minds of the debenture-holders; but there is this much in it, that it shows us it will be our duty to carry on the gardens as honest men, so that we might prevent a substantial security to the debenture-holders [hear, hear].

Mr. GODSON.—Are we safe at the present moment in the continuance of our occupation of the gardens? Supposing that £10,000 a year is not raised until the term expired, what then?

The PRESIDENT.—It would be two years until the termination of the three years.

Mr. HAUGHTON.—From Christmas next until the Christmas following. Now if the income of that period comes up to the indicated figure the gardens will be continued.

Mr. GODSON observed that there was one thing still regarding their position which it was well to have determined. Supposing that £10,000 annually was not received, what would be the result as to all their property? Would their possession last for three years or for two years?

The PRESIDENT.—That will depend upon the action of Her Majesty's Commissioners.

Mr. GODSON.—That is exactly what I want to know about.

The PRESIDENT.—If at the end of that time we are not in a position to pay our rent Her Majesty's Commissioners will be exactly in the position of other landlords, and can, as a matter of course, terminate the lease.

Mr. GODSON.—Then we are at their free will?

The PRESIDENT.—Yes, we are.

Mr. GODSON then remarked that the Report of the Council was the most extraordinary one he had ever seen presented to a meeting. The Council started their Report by saying they borrowed £5000.

The PRESIDENT.—But that is a liability of the Commissioners—it is not a liability of the Society.

Mr. GODSON.—I am very glad to hear your explanation.

Mr. TWEEDY wished to have some explanation about £2300 expenditure on the Chiswick Gardens, which was at one time a most fashionable resort. It seemed to him that the Chiswick Gardens had ceased to be of any use to the Society [no, no]. What he would suggest was that they should sell the Chiswick Gardens [cries of "no," and laughter]. Well, he should much rather that these gardens were sold and some of the money appropriated to the payment of the debts of the Society than that their existence should be continued. He did not see the means of keeping up the cost of the establishment.

The PRESIDENT.—My old friend proposes we should give up these gardens. I have mentioned the 47,000 plants have been brought from them to these gardens. He has referred to the past times of the Chiswick Gardens when during some few years it was a fashionable resort, but now the gardens are turned to use for scientific experiments and for horticultural purposes. As to selling the Chiswick Gardens, I entirely disagree with my friend [cries of "hear"]. I cannot see any good effect such a proceeding would have [hear, hear]. I do not know whether my friend saw the undignified entry of the President into this room, because it really looked like the present position of the Society. One of his legs was firm and stout, and that I conceive to represent the Chiswick Gardens [laughter and cheers].

The other leg was weak, tottering, and useless, which bears a remarkable resemblance to the South Kensington Gardens [more laughter]. The crutches I take to represent the Commissioners, who alone interfered between us and bankruptcy [hear, hear]. Now if the crutches gave way the sound leg would be reduced to the condition of the other one, and I do not know what the unfortunate man—or, carrying out the simile, the Society—could do without the crutches, which represented the Commissioners who alone interfered between us and bankruptcy as I stated before [hear, and cheers].

Mr. LINGGIE said they appeared to forget that in the old times they were not able to meet their expenses, and that in order to put themselves in proper funds it was necessary to do something more than maintain Chiswick Gardens. If in consequence of the failure of the Royal Horticultural Society they were to go back to Chiswick Gardens, it would be more detrimental to them than anything they could do. He had been always one of those who thought they should cultivate the connection with South Kensington, not with respect to horticultural gardens so much as with respect to affording them a large income [hear, hear]. The South Kensington Gardens were in the midst of London, and of those who cared for little but for London and its pleasures. The money of these people was just as desirable as the money of horticulturists, but it was only by a union of the two that the Society can be made a paying concern [hear, hear]. He hoped some measures might be taken to raise the income, so as to enable the Society to continue its connection with the Commissioners.

Mr. WOOSTER observed that the Society was losing in reputation by the impression which was abroad, that there existed no security for either capital or interest due to the debenture-holders.

THE PRESIDENT.—Would you suggest what possible property this Society could offer as security for the £50,000 debenture debt?

MR. WOOSTER said there was in the agreement with the Commissioners a clause touching the life Fellows which was for the purpose of forming a sinking fund for the ultimate extinction of the debenture debt. He only wished to remind his lordship and the other Fellows of this stipulation, and that the impression to which he had alluded did very serious injury to the future prospects of the Society. The original interest of the debenture-holders was 5 per cent., but after the expiration of a year that was thought too much, and then in July, 1861, there was a letter sent to the debenture-holders proposing a reduction of 1 per cent. The debenture-holders consented to that proposition, and he thought this was really a legal debt due by the Society to those who had taken the debentures, and that they ought to be secured.

THE PRESIDENT.—What property have we available for paying off the debt?

MR. WOOSTER.—I am merely suggesting that the impression which is abroad might probably prevent the public from joining the Society.

THE PRESIDENT.—But the practical result is this, that if the Fellows subscribe they will pay the debenture debt. That is the practical solution of the question. What other solution can there be?

MR. WOOSTER further observed that it was a remarkable circumstance that in the Report there was no mention as to the non-fulfilment of the conditions of the circular issued the 17th of March, 1873, touching a certain series of lectures which was to be given by the Society.

THE PRESIDENT.—My answer to that last remark is that the circular was sent to all the various Fellows, and we only got one answer [laughter]. We naturally did not think it right to establish lectures for one auditor [laughter].

MR. GEBDALLA thought the Council ought to disown the action taken by Mr. Wilson. Some notice ought to be taken of this by gentlemen on the other side of the table.

MR. WILSON rose to say he thought they were considering the subject that day almost exclusively from a South Kensington point of view, as they were told the hope of the Society depended upon collecting funds from the neighbourhood amounting in one year to £10,000.

THE PRESIDENT.—I said the hopes of the Society if it were to continue.

MR. WILSON said the letter in the *Times* of the 19th January was perfectly conclusive. They kept on trusting to the neighbourhood of South Kensington instead of going at once to the great body of horticulturists throughout the country. He wanted to see a large number of horticulturists—say five thousand country horticulturists, or horticulturists from town and country, come forward and give their names as supporters of the Society [hear, hear].

A LIFE FELLOW said he had been told the Society had always been in difficulties. Now, supposing such a state of things as that the Chairman had sketched out—that Her Majesty's Commissioners detrained upon the gardens and turned the Society out of them—in what position were they likely to be in then? because, from all he had ascertained, if they went back to Chiswick they would go back to the old condition of debt and difficulty.

THE PRESIDENT.—I may say I think that if the Society were simply a scientific society and unconnected with South Kensington it would get a good deal of independent support on that ground [hear, hear]. I have heard frequently one reason why people do not join these gardens, and that is that they will be bound hand and foot to South Kensington, and that the whole object here is to keep up the gardens in a magnificent state. That impression I am told is very strong, and that it cannot be removed without disuniting the two establishments. But I would do nothing to disunite the two, but endeavour to preserve the union [hear, hear]. But I will say certainly that if that did take place a large number of horticulturists would be induced to come forward and join the Society [cries of "hear, hear."]

Then we must recollect in the case of Chiswick that it had a large debt in spite of many sacrifices. A large scheme was set on foot in 1860, and a great deal of money was spent in scientific proceedings, whilst our debt at South Kensington has not arisen from the prosecution of scientific research. I am told that for several consecutive years they had at Chiswick beautiful weather, fine summers, and hence large gatherings at the Chiswick Gardens, and of course the receipts were very large. Then came three or four successive years of bad weather with very large expenditure and next to no receipts, during which a large portion of the debts were incurred. Since these days horticulture has spread enormously. I should not be surprised that there should be five thousand men ready and willing to give £5000 for the purpose of real scientific horticulture, but I think it much more likely to be got from members of the Society where there is a scientific society united for social purposes with South Kensington [hear, hear].

LORD ALFRED S. CHURCHILL.—In proposing his scheme, Mr. Wilson will recollect we are tied hand and leg to these gardens until two years expire, or until we raise our subscriptions to a certain amount. I can hardly agree that, if we were once freed of these gardens, we would get a large amount of horticultural support from the country. I have recently returned from Dublin, and there they maintain a horticultural society, and one that is in a most flourishing condition. They have their scientific meetings, they give away prizes, and do all the scientific work which a horticultural society ought to do. I said to a friend of mine the other day in Dublin, "I should like to see your gardens." "Oh," said he, "we have got no gardens" [laughter]. The fact is, they work on without gardens, and subscribe together for a common purpose. Therefore, if that answers in Dublin it ought to answer here; but, in addition, we have got Chiswick Gardens, which were considerably reduced in size when we spent our money so prodigally, so that we can maintain our gardens at a reduced cost. If we once got rid of these gardens at South Kensington our expenses would be reduced considerably, and we could keep the other gardens for scientific purposes [hear, hear]. If we could get rid of the incubus of these gardens Mr. Wilson's scheme must work. At any rate, under the circumstances we must do the best we can, and in view of that we have proposed various modifications in your subscriptions.

MR. H. VEITCH said his name unfortunately appeared as one of those who gave their sanction to Mr. Wilson's scheme; but he was not prepared to go the length to which Mr. Wilson had gone. He regretted that Mr. Wilson appeared in the press in the way he had, because it seemed to him (Mr. Veitch) that Mr. Wilson was trying to coerce the Society into adopting a policy which would be very dangerous to the Society [hear, hear]. He wished so far to disavow his intention to adopt Mr. Wilson's plan. Mr. Wilson told them that a great body of people would come from the country to subscribe to the Society, but in the list which Mr. Wilson had recently circulated—that of the 5th of January last—he found that the whole number of people amounted to only 373—not a very large number, considering the circulation the scheme had got, and out of these 373 he should think about one-third of them were already members or Fellows of the Society. Now, that would reduce Mr. Wilson's list very considerably [hear, hear]. With regard to the Society itself, it seemed to him that neither the horticulturists pure and simple, nor the horticulturists of South Kensington, can by themselves keep the Society going. It could only be kept up by all working together [cheers]. They wanted along with horticulture the extras, so as to make the building at South Kensington as attractive as they possibly could. They must bring their fruits and flowers there to be exhibited, for it was their interest to do so [hear, hear]. As regarded the gardens themselves, they did not actually want them. They wanted a place for their meetings and for the Council, to which they all could come. On the other hand, if the South Kensingtonians would come forward to liberally support the institution, he thought it would be the best thing for the Horticultural Society to keep up the gardens, so that they could be enjoyed. If the people would only come to-morrow (Wednesday) afternoon from the country, he could promise them a very beautiful show, and that they would find not only a horticultural treat but a band of music playing for their pleasure and enjoyment. That was what he called a very proper amalgamation [hear, hear]. There was one point on which he should like to ask a question. On page 3 of the Report, in the last paragraph, it is stated—"The provincial shows stand on a more favourable footing, and the Council have now under consideration when and where the next shall be held." He should be sorry to hear that nothing was to be done as to provincial shows. It did seem hard that, when the money had been fairly earned, the firstfruits of the provincial shows should have been forcibly taken away for other purposes [hear, hear]. If they had the money in hand the provincial shows would be held, and judging by the results of former shows, they would bring in a very fair income to help the Society. He should like to know what steps have been or are being taken towards holding provincial shows this year; on what footing were they to be, and what amount of consideration the Council had given to the subject?

THE PRESIDENT.—I am hardly in a position to give a distinct answer to that question. All I can say is we are in communication with one of the principal cities of England, and have a very strong hope that we shall be able to do something successfully [hear, hear], and lay perhaps the foundation of a new future for the Society. I have no doubt if we are successful we might have a guarantee fund which would put us out of all difficulties of a financial character. If some surplus remained we would have the nucleus of a capital sum which would enable the Society to have a show—a provincial show—annually [hear, hear]. Warned by the past it is the intention of the Council to invest in trustees any surplus they receive, and to have due application for the same [hear, hear]. Let me correct a mistake I involuntarily fell into. I said that at the time the Society

joined South Kensington they had a debt of £10,000. Dr. Hogg, who knows much more about the matter than I do, tells me that though the original debt was £10,000, it had been reduced by the sale of houses in Regent Street, and the actual amount of debt remaining was £5000. But whether it was £5000 or £10,000, it shows that the method of carrying on the Society was not successful. Good finance, which is everything in the management of a kingdom, is as necessary to a society [hear, hear]. I am of opinion that all this indirect and unnecessary expenditure ought to be abolished. It is through the assistance we have received from Mr. Veitch and others that we have been enabled to have our exhibitions, and I am sure the Society cannot be too thankful for the assistance received from Mr. Veitch and other gentlemen [applause].

Mr. ELWES said he thought there was no reason whatever why there should not be a perfectly fair union between the South Kensington and the Horticultural Fellows; and the South Kensington Fellows should remember that after all, the Society being a horticultural one, horticultural objects would be the first objects of the Society. By the action of the Zoological Society it was evident such a union was perfectly possible. No Society was more popular, and, although some of the members worked in a purely scientific groove, matters were so arranged that the Society has attracted three-fourths of their members who did not care a straw about zoology, but who joined the Society for the purpose of attending the gardens on Sunday [laughter]. They also opened the gardens at a low figure on Whit-Monday and other days, and so attracted a large number of the people of London to them. Although it was impossible for the Horticultural Gardens to have so much general attraction as the Zoological Gardens, if the South Kensingtonians wished them to be kept up they could do it by contributing their fair share, which would enable the Fellows of the Society not only to carry on the gardens as they ought to be carried on, but to do good horticultural work besides.

The PRESIDENT then put the question, "That the Report be adopted," and it was carried with one dissentient (Mr. Godson, sen.) Thirty-nine new Fellows were then elected.

The result of ballot was announced by the President. Those recommended by the Council were declared elected as follows:—President, Lord Aberdare; Treasurer, Mr. H. Webb; Secretary, Dr. Robert Hogg; Expenses Committeemen, Mr. F. Campion, Mr. H. Webb, and Mr. W. Haughton; Auditors, Mr. J. Lee, Mr. H. Little, and Mr. James F. West.

The PRESIDENT, referring to the proposed alterations of the bye-laws, said the Council had, as a last effort, to conciliate the inhabitants of that neighbourhood, and so far as they could ascertain by the expression of feeling, the proposed alteration of the bye-laws would have a good result. They had just elected the good number of thirty-nine Fellows, and in addition to that fact they had a great many of those who had left the Society returning to it, so in that respect the affairs of the Society looked more promising [hear, hear.] He thought they should unanimously adopt the new bye-laws.

Dr. HOGG (Secretary), said it was proposed to alter the 14th and 15th bye-laws, first by suspending the payment of the entrance fee, which was provided for by the 14th bye-law. The 15th bye-law provided that no Fellow whose entrance fee was not paid should be entitled to vote at meetings of the Society. It was now proposed to strike out the words "when the entrance fee has not been paid."

The PRESIDENT in reply to Mr. Veitch, who put a question respecting one-guinea membership, said he had not been able to attend the Council meeting lately, and was therefore unable to say what attention had been given to that subject. He took the view of Lord Alfred Churchill on the matter—that it would be an excellent plan, if this were simply a horticultural society, to have a guinea membership [hear, hear].

Lord ALFRED S. CHURCHILL said the guinea members should have all the privileges of Fellows except that of voting at the meetings of the Society. It had been felt that it would be open to any person, who, say, had strong objections to the Council or policy of the Society, to induce people to become guinea members, in order to control the action of the other Fellows. The Council thought they should give to guinea members all the privileges of personal admission to the gardens and to shows, exhibitions, &c.; in fact, all existing privileges except that of voting at the general meeting. He was glad to say two members had been elected according to this plan.

Mr. GONSON asked if the guinea subscription ticket was transferable.

Lord A. S. CHURCHILL said it was not. Any guinea Fellow who desired to exercise his voice in the management of the Society could do so by paying an additional guinea.

The alterations in bye-laws 14 and 15 were then agreed to.

The PRESIDENT observed that he thought in the present position of the Society the entrance fee would operate in preventing people from joining the Society, and that it was wise therefore to exercise the power of doing away with an entrance fee [hear.]

Lord ALFRED S. CHURCHILL wished to mention an additional

source of income to which they looked forward with hopeful anticipations. Throughout the whole country there was a large number of local horticultural societies, and the Council were desirous of affiliating them with the Royal Horticultural Society. Indeed many of them had been affiliated to the Society for years, and were put in the position of individual subscribers. The Council proposed to give gold or silver medals for distribution in the local shows [hear, hear]. That would enable the local societies to distribute as rewards for merit at their shows medals of the Royal Horticultural Society. He hoped that the result of the proposition would be, as he did not doubt it would, to bring to them a large number of local horticultural societies scattered all over the country [hear, hear].

Dr. DENNY said he wished to explain with reference to refunding the money which was taken, that the Council could not refund it out of the money which was lent.

Mr. GONSON.—Did you not apply that money to pay your rent?

The PRESIDENT.—No.

Dr. DENNY further explained that the Finance Committee, consisting of three of Her Majesty's Commissioners, objected to any money being spent on provincial shows. He could not believe but that if the matter had been properly put before the Finance Committee the money might have been raised by guarantee; but he did not believe the Commissioners would allow them to refund the money.

Mr. H. WARR (Treasurer).—If I ever get any provincial show money again it shall be properly invested [laughter], and not at the dictation of President, Vice-president, or anybody else [renewed laughter].

Mr. H. VEITCH.—I promise you that if you get up good provincial shows we will have the money to invest [hear, hear.]

A cordial vote of thanks was then given to the noble President, and the proceedings terminated.

REPORT OF THE COUNCIL.—Notwithstanding the many disadvantages with which the Council have had to contend, they have the satisfaction of congratulating the Society on the progress that has been made during the past year in the advancement of scientific and practical horticulture.

At no time in the history of the Society has greater interest been manifested in this important pursuit, both commercially and as an intellectual recreation; and the operations of the Society have been directed not only to promote and encourage, but to anticipate the growing taste for horticulture by all the appliances it has at command.

The Scientific, the Fruit, and the Floral Committees have met during the year without intermission and worked assiduously at their respective branches; and under their superintendence and direction much valuable work has been done in the garden at Chiswick as well as at the meetings at South Kensington.

The meetings of the Scientific Committee have been well attended. Many most interesting facts in the morphology and physiology of plants, as well as the branches of teratology and pathology, have from time to time been brought before the meetings, and the investigations of the Entomological Department, with reference to the injuries produced by insects on plants, have been of the greatest importance. Mr. Smith's observations on the resting spores of the *Peronospora*, referred to in last year's report, were on several occasions fully confirmed, while the facts afforded by the late lamented Mr. Snee's very numerous microscopical preparations of the aphides which attack Potatoes, and which were found to be infested by the *Peronospora* actually producing oospores *in situ*, tended greatly to confirm the accuracy of Mr. Smith's researches, while his discovery of resting spores in the *Fusicarpium Solani*, a fungus which is sometimes almost as destructive as the *Peronospora*, demands especial attention. Amongst other matters the grafting of a dwarf Sunflower on the Jerusalem Artichoke, and that of different species of Solanum on one another, as effected by Mr. Maule of Bristol, though requiring confirmation, were of high interest; while Dr. Hogg's attempt of a classification of Apples was brought before the Committee and thoroughly discussed, its Secretary bearing ample testimony to its usefulness and to the credit which its operations ought to confer on the Horticultural Society.

The Fruit Committee has also been engaged in doing good work in its department, and the reports of the experiments that were conducted at Chiswick under its superintendence will be found in the part of the Society's *Journal* which has recently been issued. These consist of elaborate trials of 214 varieties of vegetables. Besides the reports that are already published there are others in preparation which will treat on 150 varieties of Strawberries.

The large collection of cordon-trained Fruit trees, covering the west wall of the garden at Chiswick, fruited last season for the first time, and of these many notes were taken which will furnish matter for a special report. This is the most complete collection of Cherries that can be obtained, and consists of some

hundreds of varieties, all of which will be proved as to their adaptability to the climate and their uses in this country. The cordon-trained Peaches on the south wall show a great promise of fruit for the present year, which will enable the Fruit Committee to compare them with one another, to ascertain their merits and to settle their synonyms. The crop of Peaches in the large orchard house was most satisfactory, as well as that of the Vines in the large conservatory.

The distribution among the Fellows in this department were 3851 packets of cuttings of fruit trees.

The work of the Floral Department has been by no means unimportant from a practical point of view. The most useful of the observations made during the past year have been those relating to the double-flowered Zonal Pelargoniums, a class which has rapidly increased in numbers, and of which it was highly desirable that a knowledge of the best sorts should be obtained. This has now in great measure been secured, as will be seen by a reference to the report in the recently-issued number of the *Journal* of the Society.

Some modification has also been made in the mode of testing the merits of the new varieties of Zonal Pelargoniums, of which an extensive series has, thanks to the raisers and growers of these plants, been annually brought together at Chiswick for some considerable period. Instead of bedding-out all the novelties the first year, as has hitherto been done, the Floral Committee thought it would be more desirable to grow the new sorts for the first year under glass, in order to test their suitability for pot culture; and the second year, when better established plants would as a rule be attainable, in the open air, in order to ascertain their adaptability for bedding purposes. This has accordingly been done, and it is proposed to follow the same plan in future.

The actual trial collections consisted of 165 varieties of Double Pelargoniums, 39 sorts of Ivy-leaved Pelargoniums, and 182 sorts of new Zonal Pelargoniums. For the opportunity of procuring these very complete collections of Pelargoniums the Council were indebted to the Pelargonium Society.

The distributions in this department to Fellows have been 2900 packets of various kinds, 1600 packets of cuttings, and 20,000 packets of seeds. It has been found that the distribution of plants gives much greater satisfaction to Fellows than the former mode of balloting for them.

A valuable collection of ornamental hardy herbaceous plants has been formed, and arrangements have been made for making beds of the popular old florists' flowers, such as Ranunculuses, Anemones, Carnations, Picotees, Auriculas, &c.

The number of plants that was supplied from Chiswick for the decoration of the conservatory and gardens at South Kensington was 47,872 up to July 18th, when the supply was discontinued, and the estimated value of these is £901 7s.

The state of the subscription list has not as yet been such as to justify the Council in issuing the usual schedules of flower shows, but they hope that it will ere long enable them to do so on a scale creditable to the Society. Although the great shows are, except under unusually favourable circumstances, attended with considerable loss, the Council, having regard to the general feeling of the Fellows in favour of these shows and their practical use in popularising horticulture, have decided to continue them in as efficient a manner as the funds at their command will permit. The provincial shows stand on a more favourable footing, and the Council have now under consideration where and when the next shall be held.

The Council will continue to encourage the fortnightly meetings, which form so great an attraction to all lovers of flowers, fruit, and horticulture generally. At these meetings may be seen all the novelties that have been collected by commercial or private enterprise from every part of the world, and also many of not less interest which art has produced in our gardens at home. The large attendances of Fellows and their friends that are usually seen at these meetings are an evidence of the interest that is taken in this part of the Society's work. To make these meetings even more attractive it is intended to try the experiment of holding them in the conservatory, and to have a military band in attendance.

Through the liberality of many of the exhibitors and some distinguished amateurs, Fellows of the Society, who have from a spirit of devotion to horticultural science supported it at great personal expense, the Council were enabled in July and November of last year to present two as grand exhibitions as have ever been seen in the gardens at South Kensington, and they have reason to believe that it is in contemplation to act in the same liberal manner some time during the present season.

The agreement entered into with Her Majesty's Commissioners in April last authorised the Royal Horticultural Society to borrow £7000 upon their guaranty of repayment in case they resumed possession of the gardens. The Council have borrowed upon this security £5000, which enabled them to pay outstanding liabilities, prizes, and medals; so that on 31st December last the Society had a balance in hand more than sufficient to

pay all their outstanding liabilities. The Society may be said to have commenced this year without debt or liability (except that attaching to surplus income in respect of debentures), which has not been the case for very many years past.

On the other hand, the Council have to regret that the receipts of the gardens have not proved sufficient to pay the interest on the debentures.

The strictest economy has been exercised—salaries and out-goings have been reduced by about £1000 a-year, and towards the close of last season it was thought advisable to reduce the expenditure still further by closing the entrance on the west side of the gardens. This has, however been re-opened, and will so continue as long as funds will admit.

The Council have, in their circular of the 21st December, 1876, so recently addressed the Fellows on their position with reference both to Her Majesty's Commissioners and the debenture holders, that they deem it to be unnecessary to return to the subject, more especially as that position remains unchanged. They content themselves with reminding the Fellows that, while their connection with South Kensington subsists, they are bound to do their utmost to obtain an income sufficient for the discharge of three distinct obligations—viz., the maintenance of the gardens, the payment of interest on debentures, and the payments of rents to the Royal Commissioners. In spite of all their efforts their receipts during last year have sufficed for none of these purposes. Not only did the debenture holders and the Commissioners remain altogether unpaid, but the Council were obliged, by a necessary regard for economy, to make an inadequate provision for the maintenance of the gardens and their enjoyment by the Fellows. It appears to the Council, and they trust that in this view they will be supported by the Society, that, unless sufficient funds are forthcoming for the fulfilment of their obligations, a proper regard for the dignity no less than for the scientific interests of the Society, dictates the earliest possible retreat from a connection which was entered into with so much hopefulness and with such fair prospects of enlarged utility.

A LARGE OAK.—One of the finest specimens of the English Oak in Herefordshire, if not in England, is, says the *Herefordshire Times*, about to fall under the auctioneer's hammer. This fine Oak, of which a photograph and interesting account appeared in the "Transactions of the Woolhope Club" some years since, is remarkable not only for the beautiful symmetry of its growth, but for the enormous quantity of timber it contains. Viewed at some distance, however, it fails to create much surprise, and it is only on walking round the trunk and looking up to the height at which it sends forth its huge branches that you begin to realise the enormous dimensions of the tree, which represent some 25 feet in circumference, and contains 1200 feet of timber. Until within the past eight years the tree was in such a healthy growing state that it could not be said to have arrived at the prime of life, when it was struck by lightning. A sight of this grand old tree and other magnificent trees on the estate will well repay a visit to Tyberton.

SEAKALE.

SEAKALE (*Crambe maritima*) is a native of the shores of Britain, and has been cultivated for more than a century, yet it is seldom found except in the gardens of the wealthy, and in those often planted in some corner or out-of-the-way place. Considerations, such as tidiness and the facility for applying the forcing or blanching material, have frequently caused it to be planted in the worst possible situations for its free growth.

Seakale requires an open situation and a generous soil. Stiff soils are unsuited to its cultivation, though by the addition of sand or ashes (charred refuse being excellent), the soil may be rendered sufficiently friable. The best soil, however, is a deep light loam or vegetable soil, especially a sandy one. My plan is to trench the soil to a depth of 2 feet, enriching with manure as the work proceeds, spreading sand on the surface, that material finding its way downward quite fast enough if mixed with the surface soil.

The seed is sown early in April in drills 15 inches apart, covering the seed about 1½ inch deep, placing three or four seeds at every 9 inches to make sure of plants appearing at those distances. Thin out the plants after they have formed rough leaves, leaving the strongest 9 inches apart, keeping clear of weeds during the summer, and watering with liquid manure during dry weather after May. Nothing invigorates Seakale so much as dressings of salt or nitrate of soda, applying broadcast half a peck of salt to 30 square yards, and 1 lb. of

nitrate of soda to the same quantity of ground. The dressings may be applied in March and at the end of June or early in July. Both are good against slugs. By the autumn many of the plants will have crowns large enough for forcing. When the leaves part from the crowns freely dig up the roots, placing them up to the crowns in pots or boxes. A 12-inch pot will accommodate half a dozen plants, keeping the crowns about an inch from the sides and the same distance below the rim of the pot. If the pots are to be placed in a dark place there is no need to cover them, but if to be placed in the light we must invert over each another pot, and tie round the crevice a strip of canvas so as to exclude light. Any house or place having a temperature of 50° to 55° is suitable. I find it necessary to apply tepid water about once a week when the crowns are placed in soil upon the floor of a Mushroom house. The soil should be moist when used, and be kept moist, or the produce will be hard and stringy. Though 55° is the most suitable temperature for producing fine Seakale in about three weeks, yet those having the accommodation of a greenhouse or any place with a temperature of 45° may grow produce of high excellence. A temperature of 45° to 50° will insure Seakale fit to cut in four to six weeks, the latter period in early winter, the former after January, 50° to 55° in three to four weeks, and 55° to 60° in a fortnight to three weeks, it being longer in growing in autumn or early winter than in the spring. I put in crowns every fortnight sufficient for producing "Kale" daily from November to April inclusive.

In respect of blanching in the open ground, there is no better plan than to hoop over two or three rows and cover with straw or long litter 6 inches thick. Covering the crowns with pots in the orthodox fashion answers well, the pots having movable lids. Old plants become weakened by a protracted season of forcing, and it is well to bear in mind that superiority marks the produce of roots which have not previously been forced. Yet those who can command leaves and stable litter in sufficient quantity may pursue a practice even if it is antiquated, troublesome, and uncertain.

When Seakale is intended to be forced upon the ground or blanching by pots the rows should be 2 feet apart and the patches 2 feet asunder. The plants may be placed three in a triangle at 6 inches apart, or a ring may be drawn 6 inches in diameter and 1½ inch deep, seed being placed therein, and the plants be thinned to three or four in each patch.

In case of a scarcity of covering material and the absence of pots, Seakale may be blanched quite well by covering the bed before growth takes place with sand, ashes, or cocoa-nut refuse—in fact, any light material—to a depth of 9 inches or a little more to allow for settling, and when the leaves show through the covering material the "Kale" may be cut, freeing it from dirt by washing at once; but a more cleanly method is to cover 6 inches deep with dry leaves, and a little litter to keep them from blowing about, and the shoots will raise the leaves, indicating which heads are first ready for cutting. Seakale thus produced is generally of superior quality. Blanching is resorted to, to make the head more delicate in appearance and flavour, yet the heads uncovered are equally good, having a full rich flavour as compared with the blanched produce. The heads or sprouts should be cut when 4 to 6 inches in length, the object being to have them short and crisp.

In taking up the plants for forcing, all having crowns less than an inch in diameter should be rejected for that purpose, and be laid in a thin heap covered with soil until a convenient time for planting, which may be done any time when the ground is in good working order until April. They should be planted in rows 15 inches apart and 1 foot apart in the rows, the crowns to be slightly covered with soil; but before planting cut off with a knife the crown bud, for unless this precaution be taken a majority of the plants will run to seed, and good crowns cannot be expected from such, even though the flowering stem be removed. The cutting off the crown will cause other buds to start not having the flowering tendency. These plants will give fine crowns for the succeeding winter forcing. Any plants not taken up when a year old for forcing should have their crowns cut off in February or March as a precaution against running to seed.

Plants which have been forced should be withdrawn from the heat so soon as the heads are cut, or they will start into a second growth, which is not desirable if the plants are to be forced the following year; but it is undesirable to take the plants from a temperature of 55° and plant them in cold wet soil at once. It is not, of course, necessary to harden off plants in March or April before planting. I have plants which have

been forced seven years consecutively, and they are apparently good for many years to come; but they become so large in the rootstock as to be less handy than younger plants.

Plants may also be increased by planting portions of the roots. The younger the plants which the roots are taken from, the healthier and better plants they are likely to give. Small roots may be cut into lengths of 4 to 6 inches, allowing the thickest end to be about an inch beneath the surface. They may be placed in a heap as detached in taking-up, and be covered with soil, planting in February or March—planting all together rather than in small quantities, as would be the case were the root-cuttings put in as the parent roots were taken up for forcing. Plants raised from cuttings will perfect some crowns fit to force by the following winter, and if cut over in spring and left another season they will afford very fine crowns. To secure plants for forcing without interruption some litter should be placed over the surface of the beds in December to prevent the ground being frozen, or a number of plants may be taken up and stored in moist sand in a cool shed until wanted, but it is preferable to lift the plants as required.

In taking cuttings of the roots, select only the small, clean, healthy parts. I find the best roots for this purpose are had in digging the ground for replanting, they being carefully picked out in the digging, and consequently are the extremities of the roots young and healthy.—G. ABBEY.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

TELEBIA OCCIDENTALIS.—"T. occidentalis is the West African representative of the East African species, distinguished by the triplicately leaflets, short ovary, short calyx-lobe which are simply serrated, the smaller more open white corolla with smooth fringes and a red-purple eye, and by the few broad wings to the fruit; the fruit of T. pedata having no wings, but many very deep grooves. It is cultivated in West Africa for the sake of its seeds, which are boiled and eaten by the natives, and have been imported as oil-nuts into England. We have dried specimens from Sierra Leone, Abeokuta, Old Calabar, Fernando Po, and Angola, where it was found by Welwitsch, growing commonly over littoral hedges of Euphorbia aphylla. Our plant was raised from seed presented by Mr. Tserman, late of the Liverpool Botanic Gardens, in 1870; it flowered in the Kew Palm House in September, 1876."—(Dot. Mag., t. 627.)

MASSEVALLIA ATTENUATA.—"M. attenuata is one of Mr. Veitch's introductions, and flowered in the Royal Gardens in December, 1874, from specimens presented by Mr. William Saunders. Reichenbach remarks that the dried native specimens have the perianth glabrous within, whilst that of the fresh ones is finely velvety; the contrary of which is frequent in *Massevallias*."—(Ibid., t. 627.)

LIVISTONA AUSTRALIS.—"It is the most southern Palm of the Australian continent, reaching the snowy range in lat. 37° 30' S. when its trunk attains 80 feet in height, and extending thence along the west coast to the Illawarra River, in lat. 34° 45' S. It flowered annually at Kew, in the spring months, for many years. The fruits received from Mr. Hill, of the Brisbane Botanic Gardens; they resemble specimens brought by Brown, preserved in the British Museum, except in having a thicker and harder pericarp."—(Dot. Mag., t. 627.)

XANTHISMA TEXANUM.—"A very handsome Centaury-like hardy annual, with golden flowers, discovered in Texas some fifty years ago, and since found by many collectors, but never introduced into European gardens till within the last few years. It was published both in Europe and America, and as a new genus, first as *Xanthisma* by the elder De Candolle in the 'Prodromus' in 1836, and in about 1842 as *Centaureidium* by Torrey and Gray in the 'Flora of North America.' *Xanthisma* is closely allied to the great American genus *Helopappus*, which extends from California to Patagonia. The figure in 'Marcy's Expedition' is a very bad one, and represents the pappus as two distinctly double, the corolla of the ray as acute, which is owing to the margins being involute in a dry state; it omits the hairs on the achenes, and the minute serratures of the foliage. This plant flowered in Kew in November last."—(Ibid., t. 627.)

DRIMYDIUM KIRKII.—"In 1871 Dr. Kirk sent to Kew from Zanzibar bulbs of two species of this curious and little-known genus. One of them proved to be *D. botryoides*, described in the 'Linnæan Proceedings' from a couple of poor specimens, without any locality, in the collection of the late Judge Blackburn of Mauritius, and the other, the present plant. All the

known species of the genus resemble one another very closely in habit and flower; but there are two types of leaf, one with a distinct petiole and an oblong blade, after the fashion of a *Eucharis* or a *Griffinia*, a type of form very rare in Liliaceae, and the other with the blade narrowed gradually from the middle to both ends and not furnished with any distinct petiole. This is the first species of the latter group that has been brought into cultivation. It flowered at Kew first in July, 1873.—(*Ibid.*, t. 6276)

RHODODENDRON.—*Princess of Wales* "bred from *R. jasminiflorum* by the Messrs. Veitch & Sons of Chelsea. The original cross yielded the well-known useful decorative plants *Princess Royal*, *Princess Helena*, *Princess Alexandra*, &c.; and as the result of a subsequent cross, there has been obtained through these a race with larger flowers, and having all the other good qualities of the first hybrids. The variety we now figure, *Rhododendron Princess of Wales*, is one of this second race of hybrids, and one of the most beautiful of them all, the colour being a peculiarly soft but brilliant tint of rose-pink, which is set off by contrast with the pure white of the throat and tube. The foliage is similar to that of the other hybrids of like origin. This variety has been certificated by the Royal Horticultural Society and also by the Royal Botanic Society."—(*Flor. and Pom.* 3 s., p. 3.)

CHAPTERS ON INSECTS FOR GARDENERS.

No. 16.

PASSING to the butterflies, the Purple Emperor claims a place of honour; to hunt it in Oak copses with a pole of unwieldy length is a game delightful to the entomologist on sultry July days. The remainder of these sluglike caterpillars we call "Satyrs"; popularly the species are "Meadow Butterflies," or "Browns," and shades of this colour do really predominate amongst them. From meadows and lawns they pass to our flower beds, though also, in several instances, displaying a liking for dusty roads, which seems peculiar. Thus the Wall Butterfly (*Pyrraga Egeria*), often pitches on walls or stones, and being a good flier it will pass from garden to garden in succession. Like several of its brethren it has hairy eyes, possibly it sees all the better. Most abundant are the two species called the Meadow Brown (*Eupithele Janira*), in meadows and on commons; and the Large Heath (*E. Tithonus*), which is not by any means confined to heaths, but is an occasional visitant in gardens. Two of these butterflies, the Ringlet (*E. Hyperanthus*), and the Speckled Wood (*Pyrraga Egeria*), have a partiality for shady places, and their caterpillars are found in or near roads feeding on grasses. In all of the Satyrs save the Speckled Wood there appears to be only one emergence of butterflies each year, though the whole brood does not come out at once, since we may observe specimens on the wing through as long a period as six weeks or more in some summers. Various grasses afford food to all the caterpillars which hibernate, feeding-up in April and May. None of these species are in any way harmful.

We have now reached the second division of the "Exposers," and here we find the pupa is invariably "girted"—that is, a narrow or broadish belt of silk is passed round the middle, securing it to the surface on which it rests. The butterflies have also six perfect legs. The bulk of the butterflies in this division belong to the first group or section of the two it contains, being with only one or two exceptions insects of small size, and distinguished by having larvæ woodlouse-shaped. The back of one of these caterpillars usually rises into a ridge, the figure altogether is "pudgy" while it clings so closely to the leaf or twig that the head and legs are not to be seen unless it be forcibly moved. Feeding frequently on low plants, caterpillars small in size and much of the hue of the plants they feed upon, are difficult to find; several, indeed, are still unknown in England, common though the butterflies may be. Fortunately none of these caterpillars are injurious. At the head of the list appear the Hairstreaks, of the genus *Thecla*, mostly rapid fliers, fond of sporting in the air a dozen or more feet from the ground. One species (*T. Rubi*), it appears must be singular in habit, if as an entomologist asserts, it has the power of rendering itself invisible. Of course anything may become invisible when it is too far off for you to see it, but if I rightly understand his statement, he means to say that the butterfly by some manoeuvre manages to be close to you and yet prevent your seeing it. Conjurers ought really to look after this insect, as some specimens might be trained to be useful. Seldom do any of these visit gardens, but flowers,

especially Bramble blossom, much delight them, from which they can be swept off with a cautious stroke of the net.

The lively common Copper (*Polymnatus Phleas*) may be seen on various days in the summer along garden walks, sometimes engaged in a mimic conflict with a specimen of the as common Blue butterfly called *Lycæus icarus*, both having a tolerably quick and discursive flight, though the honey of flowers offers some attraction to them. Of the little Copper there seem to be three flights in the year. The Azure Blue (*Lycæus argiolus*) is another Blue likely to be seen near shrubberies, as the caterpillar feeds on the Ivy or Holly. Other Blues, of which we have seven or eight species (in some, however, the blue being replaced by brown, especially in the females), make the rural scene in summer more agreeable to the stroller; the larvæ feeding in a modest way such plants as *Trefoils* and *Velches*.

The second section of the butterflies with girted pupæ comprehends those species which in every season do a certain amount of damage, chiefly in the kitchen garden. Their caterpillars are cylindrical, with the head and legs distinctly visible, and the body is sprinkled with a few hairs. The Whites at once occur to us as illustrations of the group, but, in fact, from only two have we anything to apprehend. Perhaps the Large White (*Pieris brassicæ*) is on the whole the more injurious species, though the Small White (*P. rapæ*) is less limited in its choice of food plants, the caterpillars showing themselves in flower beds on the *Nasturtium* and other Crucifers, on *Tropæolum* and *Mignonette*. Of these butterflies there are evidently several broods during a season. The Green-veined (*P. napi*), on the testimony of the late Edward Newman, does not resort to cultivated plants, nor does the Wood White (*Leucophasia sinapis*), a rather local insect. Conspicuous species in this group are the *Brimstone*, the *Clouded Yellow*, and that rare lover of fens, the *Swallow-tail*, while the pretty *Orange-tip*, near akin to the Whites, appears for a week or two in spring even in the vicinity of London.

Lastly, with brief mention we dismiss the "Concealers," representing a very large foreign group of butterflies. Our six British species are known by the name of *Skippers*, in science the *Hesperia*. The most conspicuous species is the Large Skipper (*H. sylvanæ*), and as it goes from flower to flower in a sluggish way unless alarmed, it reminds us of a moth rather than a butterfly; and in all the *Skippers* when settled the wings are raised above the body, moth fashion.—J. R. S. C.

REVIEW.

The Cactus and other Tropical Succulents. By H. ALLNUTT, 200, Fleet Street.

THIS is a neatly-bound and well-printed little compilation of 130 pages. It appears that Mr. Allnutt made himself a plant case 3 feet long, 22 inches wide, 24 inches high at the back, and 12 at the front. The lower portion is of wood; the remainder glass. A zinc tray covers the bottom of the case, and above this tray a miniature stage of six shelves is formed for the plants. In this tiny greenhouse, which is placed on a table near the window of his living room, the owner has contrived to arrange about sixty tiny plants of *Cacti* and other succulents. These have given him much pleasure, and he has conceived that a brief account of them would stimulate other amateurs to have recourse to the same mode of making their dwellings interesting, and grow these quaint and easily-managed plants. The remaining portion of the book, and by far the most valuable, is made up of extracts (duly acknowledged) from "London's Encyclopædia of Plants," the writings of Mr. Jackson of Kew, Mr. Croucher of Hammersmith, and other growers of small and curious plants. These extracts stamp the book with an authority which it could not otherwise possess, and render it worthy of being recommended to the notice of amateurs and others who are interested in a family of interesting plants. Several of the species are illustrated in a manner sufficient to show their peculiar characteristics. To give quotations would be the extracting of extracted matter.

BARBAROSSA GRAPE.

IN compliance with the request of "J. W." on page 53 I submit my experience. I have two rods of Black *Barbarossa* growing in a house with *Muscats*, *Gros Colman*, and *Lady Downe's*. I have had bunches of Black *Barbarossa* this season 18 inches long, 13 inches across, and weighing from 4 to 5 lbs. each. The berries were as black as elces; and the flavour,

though not equal to that of the Black Hamburgh, was considered by my employer and his friends to be good. This is a useful late Grape when grown with Muscats, being, like Gros Colman, much improved in flavour by being grown in a warm house. I have just cut the last bunch of Barbarossa as fresh as in the month of July. I had some last season until April quite fresh and good.—S. TAYLOR, *Castlecroft*.

TEA-SCENTED ROSES AT LEEK.

I beg to thank "WILD SAVAGE" for his instructions as to the cultivation of Tea Roses in this locality (see page 58).

Doubtless a good deal might be done by selecting Tea Roses for localities, and if growers would kindly furnish lists of varieties which thrive best in their neighbourhood there ought to be a hope of securing a good collection for most districts.

Roses are mostly chosen from those arranged on exhibition tables. Lovers of these flowers go round, note book in hand, making lists of the beauties before them, never taking into account the constitution or hardness of the variety. The plants are ordered, and after their arrival are treated quite differently to what they have been before, and many refuse to live under their widely-changed condition. What is needed is a more intimate knowledge of their constitution and previous culture—with that, and ability and skill to humour the one and imitate the other, there might be a greater chance of successfully cultivating Tea Roses in our northern counties. My advice is to secure plants budded on the seedling Briar, for this, in my opinion, is the best stock for Tea Roses, as upon it they thrive splendidly. I believe from experience that Tea Roses budded on this stock, with protection in winter, may be successfully cultivated out of doors, even in the coldest parts of the kingdom. A little Fern (Bracken) amongst the branches—and a mulch round the roots, with proper and thorough drainage—suffices.

I submit a list of Tea Roses cultivated here. *Souvenir d'Elise* is a shy beauty, but, whether in pot or on walls, dwarfs or standards, is worth all care to produce a single fine flower. *Madame Falcot*, half standard, has been grown three years without any protection whatever in winter; it is beautiful in the bud. *Maria Docher*, standard; *Maria Van Houtte*, always good, and as vigorous as the Hybrid Perpetuals; *Devonensis*, half standard. *Belle de Bordeaux* I have grown three years, and it has never shown a single bloom, so I discarded it altogether. *Marchal Niel* has refused to open out of doors; *Goubault*, the freest and prettiest pink; *Homer*, tipped and wrinkled like Dr. Andry amongst Pelargoniums. To these I would add *Madame Margottin*, one of the best and hardiest of yellows. In *Madame Jules Margottin* and *Souvenir de Paul Neron* we have two charming bouquet Roses of lemon and rosy tints. *Cheshunt Hybrid* was obtained last autumn. This Tea Rose was highly recommended to my worthy employer by the Rev. J. B. M. Camm when in this neighbourhood last July, and I trust its constitution may prove sufficiently strong to brave our severe winters and trying springs.

In conclusion I say, Thoroughly drain your stations before planting your Tea Roses, as I consider this of the greatest importance to the plants, as it enables them to mature their wood much better than they would otherwise.—CIS. ROBERTS, *Highfield Hall, Leek*.

NOTES FROM MY GARDEN IN 1876.—No. 2.

NEXT to Potatoes (indeed, I am not sure whether I ought not to say before them) the vegetable which must and does most bother a gardener is the Pea. Imagine the difficulties a beginner must feel. He wants, say, some half-dozen kinds to secure him a supply; he consults A's catalogue. "Ah! there's a nice lot there, I should like to have some of them." Then he takes up B's, and finds, it may be, a few of those in A's catalogue, but along with them a number of fresh names; he turns to C's list and the same thing is repeated, and so he might go through all the letters of the alphabet, and rise from the perusal a sadder but certainly not a wiser man. Nor is he any way bettered if he writes to ask what are the best sorts. One correspondent praises one list, and a second another list, and so he is at sea again; and no matter what may be the desideratum, modern Peas meet his requirements. Does he want them early? Well, I am not sure but you might find some which ought to be in early in May! Productiveness? He may see photographs where the pods seem to jostle each other so that they hardly have room to hang, and pods so full that by

and-by we may expect to see treble rows. Is quality required? The flavour of some must be so exquisite that the difficulty would be to know when to stop. And, after all, "are we any better than our fathers?" Yes, I unhesitatingly say. We may laugh at the extravagant praises bestowed by the parents on their children and chuff them when we meet, but it seems to me that in all the three qualities I have named—earliness, productiveness, and flavour—we have considerably gained, owing to the perseverance and intelligence of hybridisers and care of selectors (for very many of the new varieties are but selections). There may be further improvement, but it almost seems as if we had reached our limit.

The varieties which I sowed in my small garden last year were *Emerald Gem* (Sutton's), *Early Champion* (Sutton's), *Improved Princess Royal* (Sutton's), *McLean's Best of All* (Sutton's), *Giant Emerald* (Sutton's), *Commander-in-Chief* (Carter's), *Balmoral Castle* (Carter's), *Dr. McLean* (Turner) *Dukes of Edinburgh* (Sutton's). The season was with us a very trying one. I never knew early Peas "so long on the way," owing to the cold dry weather. Midseason varieties did very well, but the later sorts were terribly cut up by mildew. Of some of the above varieties I have already given notes, and those really only new to me were *Commander-in-Chief*, *Balmoral Castle*, and *Dr. McLean*; the others were grown because upon trial they proved so good that I did not care to seek any further for sorts to supersede them. *Commander-in-Chief* is a grand Pea, a wrinkled Marrow, delicious in flavour, pods slightly curved and containing from eight to ten peas; the haulm is vigorous and healthy, and the pods are produced in great profusion. Of *Balmoral Castle* I received but a small quantity for trial. It is a strong and vigorous-growing Pea, evidently of the Supreme type and an improvement on that variety. *Dr. McLean* is in my judgment one of the greatest acquisitions we have had for some time; it is of the *Advancer* type—i.e., a blue wrinkled Marrow, about 4 feet high, vigorous in habit, and astonishingly productive. After you have had one or two pickings of it, it really seems to have as many pods upon it as other Peas which have not been picked at all. The pods are well filled, and the flavour (as it becomes a Pea named after a raiser who made it the one grand point) most excellent. Mr. Turner has been again fortunate in securing a prize of no ordinary value. The Pea which withstood with me the drought best was *Sutton's Duchess of Edinburgh*. My idea that we have, perhaps, reached our limit in Peas is borne out by the fact that there are very few new sorts announced; but many persons hold the theory (which to me seems perfectly tenable) that varieties deteriorate, and that hence we may look for new varieties to take the place of those found to have deteriorated. I believe, for example, *Little Gem* does not by any means rank as high as it did, so that we may expect to find some from time to time replacing varieties now highly valued.

I do not think that in other vegetables I had anything remarkable for novelty, with, perhaps, the exception of *Carter's Heartwell Early Marrow Cabbage*. It is a very close mild-flavoured variety, and succeeds equally well for spring or autumn use. My soil is a good friable garden loam, the situation warm and sheltered, and it may be perhaps of interest to say what varieties of vegetables I have found to do well with me.

Beans (Dwarf).—Canadian Wonder (a wonderful cropper), *Polly's Prolific*, and *White Advancer*. Runner.—Premier; of this I had a remarkable crop.

Broccoli.—Walcheren, Perfection (Sutton), Leamington, and *Champion* (Carter's).

Carrot.—Long Red Surry and *Scaulet Intermediate*.

Cabbage.—*Heartwell Marrow* (Carter's), *Tom Thumb Savoy*, and *Little Pixis ditto*.

Celery.—Sulham Prize and *Sandringham*.

Cucumber.—Duke of Connaught.

Lettuce.—Paris White, Superb White (Sutton's), Tom Thumb (Wheeler), All the Year Round, Commodore Nutt, and *Vilmorin's White*.

Onion.—Improved Reading (Sutton's), Nuneham Park (Cutbush), Long-keeping (James), and The Queen.

Parsley.—Fern-leaved (Carter's). Very pretty foliage, and excellent for garnishing.

Beet and Witloof were a complete failure; not one seedling of either appeared above ground; while *Tomatoes* I have been obliged entirely to discard, the disease having for three or four years destroyed my crop. I have, however, a notion of planting some against a low fence, and seeing whether this

new situation will be any better. I much regret my failure, as Tomatoes are much prized. In conclusion I wish it to be distinctly understood that I only speak of these things as I have found them, and only recommend them for soil and situation like my own. How they may succeed elsewhere I know not.—D., Deal.

MESSRS. BOUTLON & PAUL'S THREE-QUARTER SPAN-ROOF GARDEN FRAME.

This frame for growing Cucumbers, Melons, &c., and for storing plants, with four lights, is 16 feet by 6 feet, is made to give height and convenience. The front is 11 inches high, without the light, 32 inches high at the ridge, and 22 inches high at the back. The front lights can be turned back on to the lights behind, and back lights turned on to the front lights, giving access to all the plants inside. The frames are made of the best red deal, sides and ends 1½ inch thick 2-inch lights; all are painted three times, and glazed with 21-oz.

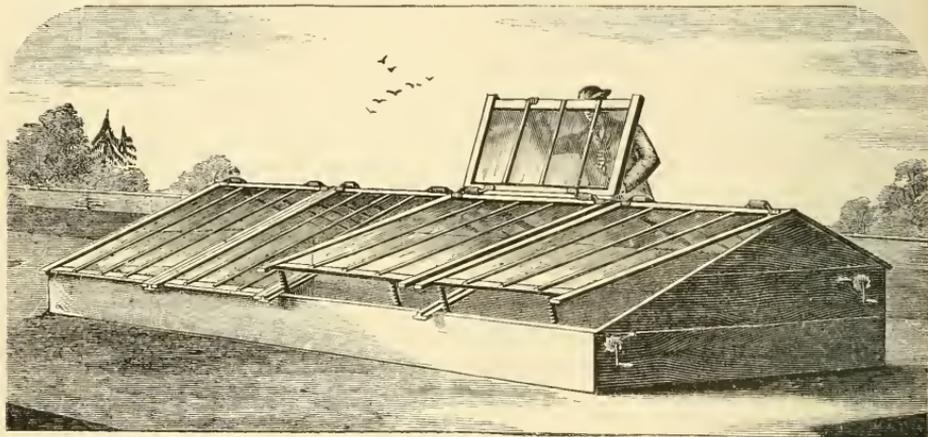


Fig. 17.

sheet glass. The illustration shows the lights to open with gearing. Any of the lights can be lifted up when required without altering the other lights. The back and front gearing works separately.

Only a glance is needed to satisfy that this is a highly useful frame. It is recommended for "storing" plants, but it will not only protect but will aid in growing to perfection during the summer months many plants which are required for indoor decoration. Such plants as Chrysanthemums in their early stages, Primulas, Cinerarias, Calceolarias, Geraniums, Fuchsias, Balsams, Celosias, and many others can be grown much better in frames during the summer months, when sufficient height is afforded, than they can be in houses. By judicious ventilation, early closing, and damping, a genial stove temperature may be provided in a frame during the three principal summer months, and then such plants as Poinsettias, Achimenes, and Gloxinias may be provided for furnishing the more ornamental plant structures. During the winter light roomy frames are very valuable for protecting half-hardy flowering plants and vegetables. Frames are, in fact, indispensable in every garden where protective aids are needed, and they are the gardener's best friends.—W.

MUSCAT GRAPES AND RED SPIDER.

Do Muscats require so much heat as is generally supposed? My reason for asking the question is, that I witnessed a few years ago a large house of Muscats in a very bad state with red spider. The cause of this was said to have been insufficient heating power. Now, in my opinion that was not the sole cause. My reason for thinking that a too low temperature was not the cause of the red spider is this—that I have

been in the habit of growing Muscat of Alexandria and other Muscats in a mixed house for many years, and in a lower night temperature than is generally adopted. Indeed, I may say that throughout the growing season the house I allude to has been kept on an average (during the night) 8° lower than what is advised by many eminent Vine-growers, and I have never been troubled with red spider on the Muscats.

My belief is, that Muscats require more moisture than many other Grapes, especially in the atmosphere. If a Vine border has been allowed to become very dry in winter, or when the Vines were at rest, it will be no easy matter to soak that border in a manner suitable for future requirements. Moisture, it is true, may be applied to the border, but not prepared in the best manner possible as food for the Vine. Anyone who has used manure water must be aware that it is greatly improved by standing, say, two months before using, hence my reason for advocating a good soaking of manure water while the Vines are at rest. The time that intervenes before the Vines are in growth is not best, but is employed as it were preparing food for effective appropriation in due time. Many

are in the habit of never watering their Vine borders from the time the Grapes commence colouring until the Vines are again started in the spring—a much more likely cause of red spider than a too low temperature.

In growing Grapes why do we ignore the teaching of Dame Nature? She is a good guide in these matters, and it is well known that soil in winter is much heavier and carries more moisture than at any other season of the year, and yet many Vine-growers act the very reverse of that, keeping their borders so dry that cracks running in all directions may have been seen in them. Surely that could not be good for the Vines the following season. The soil may contain all necessary ingredients, but water must be present to prepare them for appropriation by the Vines. Inattention to a due supply of water at all seasons has no doubt been the cause of much annoyance with red spider. I have always found great benefits to accrue from liberal mulchings to all fruit trees in winter, and I see no reason why Vines should be starved and red spider encouraged by a deficiency of water at any season of the year.—J. DICKSON.

EARLY WRITERS ON ENGLISH GARDENING.

No. 27.

SIR JAMES EDWARD SMITH, M.D.

NORWICH has for many years been noted for being the birth-place of distinguished botanists and horticulturists; we need only instance within the present century Sir W. Hooker, Dr. Lindley, and the subject of our present illustration.

On the 17th of March, 1823, died at his house in Sarrey Street, in his native city of Norwich, aged sixty-eight, Sir James Edward Smith, M.D., F.R.S., Member of the Academies

of Stockholm, Upsal, Turin, Lisbon, Philadelphia, New York, &c., the Imperial Acad. Naturæ Curiosorum, and the Royal Academy of Sciences at Paris, Honorary Member of the Horticultural Societies of London and Chelmsford, and the first President of the Linnæan Society.

He was the son of a respectable dealer in the woollen trade at Norwich, where he was born December 2nd, 1759, and where he was educated for trade, but changing his plans of life he went to Edinburgh in 1780 to pursue the study of medicine. He had previously attached himself to botany and natural history, and at Edinburgh obtained the gold medal given to the best proficient in botany at that university.

Upon removing to London to perfect his professional knowledge he became acquainted with Sir Joseph Banks, that eminent patron of natural science and of all its ardent admirers, upon whose recommendation he purchased in 1784 the celebrated Linnæan collection, comprising the epistolary correspondence of the great Linnæus and his son, together with everything that belonged to those eminent men relating to natural history or medicine. So highly was this collection esteemed, that the King of Sweden, hearing it was sold, actually sent off a ship to bring back the vessel which contained it; but fortunately for the interests of science the precious loading arrived in England before the vessel could be overtaken.

From that period the life of Mr. Smith was devoted to the ardent pursuit of the science, and his numerous works will constitute a perpetual monument of that fame which no living author more duly merited or more justly obtained.

Having purchased the Linnæan collection and settled in London as a man of acknowledged science in the year 1786, he graduated as a physician at Leyden, and in that and the following year he visited most of the classical and celebrated places of France and Italy. The account of these travels was published in 1793 under the title of "A Sketch of a Tour on the Continent," in three vols. 8vo., a work which at once raised the subject of our memoir into the first class of literary society. Upon his return to London, Dr. Smith, in conjunction with his friend Dr. Goodenough, Lord Bishop of Carlisle, who was one of the original Vice-Presidents, and Thomas Marsham, Esq., who became Treasurer, set about establishing the Linnæan Society, of which Dr. Smith was the original President, and to which distinguished office he was annually and unanimously chosen from that period to the time of his death.

In February, 1788, a few friends met together at the Doctor's house at Chelsea, among whom were Dr. Goodenough, Messrs. Marsham, Lightfoot, Latham, and Dryander. It was at this time agreed that a Natural History Society might be formed on a more extensive scale, and that the new institution might with propriety bear the name of Linnæan after that of the great Swedish naturalist.

At the end of the month a meeting was held at the Marlborough coffee house, the rules fixed and printed the 18th of March following. After this proceeding other members were chosen by ballot, and Sir J. Banks, the Earl of Gainsborough, and the Duc de Noailles made honorary members.

The first meeting was held April 8th, 1788, when "An Introductory Discourse on the Rise and Progress of Natural History" was read by the President. This forms the first article in the "Transactions of the Linnæan Society."

In 1792 Dr. Smith was invited to give some instructions in his favourite science to the Queen and the Princesses at their rural and elegant retreat of Frogmore near Windsor, and how well he was calculated for such an appointment, those who have derived delight and improvement from his lectures at the Royal Institution, at Liverpool, at Bristol, &c., can amply attest.

In the following year he retired from London to reside in his native city, and with occasional visits to the metropolis, where he had a very numerous circle of scientific friends, as well as an extensive acquaintance in the highest ranks of society, to whom he was warmly attached, and by whom he was reciprocally esteemed, Norwich became his constant residence.

In 1814 Dr. Smith received the honour of knighthood at the hands of the Prince Regent, and who had become patron of the Linnæan Society.

The Horticultural Society was pleased to enrol the name of Sir James Edward Smith as one of its honorary members in conjunction with those of the Duke of York, Prince Leopold of Saxe Coburg, and Sir Humphry Davy.

The health of Sir James Edward Smith had been for some time declining, but pursuing the even tenour of his scientific pursuits, and blessed with every comfort which a congenial union can afford, his time glided on without the slightest re-

laxation of ardour in his botanical pursuits, while his latest and even his unfinished works attest there was no diminution either of his zeal or his success in affording information. Although none of his friends could be altogether unprepared for the melancholy event, still the decease of Sir James was somewhat sudden. The feebleness of his frame seemed to have in some degree recovered a little of its former tone during the last week of his existence, so that he was enabled to pursue his accustomed labours, and even to enjoy the exercise of taking a walk without any great fatigue. He was attacked, however, on Saturday, March 15th, with such an alarming degree of debility as almost immediately to extinguish the hopes of his recovery. Under this attack he gradually sunk.



Fig. 18.—Sir James Edward Smith.

Among the numerous works of which Sir James E. Smith was the author it may be desirable here to point out one or two perhaps besides his "Tour," as those upon which his fame was in a great measure reared, and upon which it may be said to be permanently established. Of these "English Botany" is entitled to the first consideration, as containing a description and a coloured figure of every plant known to be indigenous. This work consists of thirty-six octavo vols., and contains 2592 figures of British plants.

It is a curious but a melancholy coincidence that on the very day he entered his library for the last time, the packet containing the fourth volume of his "English Flora" reached him, and he had the gratification of witnessing the completion of a work upon which his friends have frequently heard him express an opinion that it was the one which would eventually redound most to the estimation of his knowledge as a botanist and his credit as an author. This work is dedicated to Sir T. G. Cullum, for fifty years the intimate friend of the deceased.

The productions of Sir J. E. Smith, as an author, during the long space of forty-two years, filled a multitude of volumes, besides tracts and contributions to scientific journals. Besides those already noticed he was the author of amongst others the following distinct publications:—*Dissertatio quædam de Generatione completens*, Leyden, 1786; *Dissertatio on the Sexes of Plants*, from the Latin of Linnæus, Lond., 1786; *Plantarum Icones hæcenus ineditæ, plerumque ad Plantas in Herbario Linnæano conservatas delineatæ*, Fascic. i. 1789, ii. 1790, iii. 1792; *Reliquiæ Rudbeckianæ*, &c., Lond., 1789; *Spicilegium Botanicum*, Fascic. i. and ii., 1792; *Linneæi Flora Laponica*, 1792; *Specimen of Botany in New Holland*, 1793; *Icones pictæ Plantarum rariorum*, &c., 1793; *Natural History of the rarer Lepidopterous Insects of Georgia*, 1797; *Tracts relating to Natural History*, 1798; *Flora Britannica cum notis J. J. Römer*, 1800-1804; *Compendium Floræ Bri-*

tannice, 1800; In Usum Floræ Germanicæ, 1801; Introduction to Physiological and Systematical Botany, 1807. Sir J. E. Smith added to the characters in the two following works of Dr. Sibthorpe: Flora Græca, 1808, and Flora Græca Prodromus, 1808; Tour to Hafod, the seat of T. Johns, Esq., 1810; Læchies Laponnica, or a Tour in Lapland, from the MS. Journal of Linnæus, 1811.

In 1821 Sir James Smith selected from his copious MS. stores two volumes of the "Correspondence of Linnæus with eminent Naturalists." These volumes abound with particulars interesting to all literary men, but especially so to naturalists, and we know it was the intention of Sir James Smith to have favoured the public with a continuation had the success of the first two volumes answered his just expectations. But naturalists are by no means all readers; their studies are rather in the book of Nature than the book of the author. They would not, however, be less fitted for their pursuits if they were more accustomed to add past experience to modern practice by the perusal of works similar to that now noticed.

Sir J. Smith contributed to the Philosophical Transactions a paper on the "Irritability of Vegetables," 1788. His papers in the Transactions of the Linnæan Society are too numerous to be here particularised, as will be seen by reference to the contents of the Society's volumes. He also contributed to Nicholson's Journal, vol. xxii. an "Inquiry into the Structure of Seeds, and especially into the true nature of that part called by Gærtner the Vitellus."

Sir James was a gardener as well as botanist, as is testified by his contributions to the Transactions of the Royal Horticultural Society.

In 1796 Dr. Smith was married to the only daughter of the late Robert Reeve, Esq., of Lowestoft, Suffolk. Lady Smith died on the 3rd inst. at Lowestoft; had she lived about three months longer she would have completed her 104th year. In a case so remarkable as that of Lady Smith it is right to give the evidence of age in full. Here is an extract from the parish register:—P. 393. Christenings in Lowestoft, A.D. 1773. May 12, Pleasance, daughter of Robert and Pleasance Reeve. (Signed) JOHN ANNOV, Vicar." And in the family Bible is following the following entry made by the father:—"11th May, 1773.—The said Pleasance was delivered of a daughter about one in the afternoon, and [she] was baptised by the name of Pleasance." Lady Smith was born two years before the outbreak of the American War, sixteen years before the fall of the Bastille. At the age of twenty-three she was married to Sir James Edward Smith, who was then a young physician of limited means. He found in his young wife a helpmate who took the deepest interest in his pursuits, and their house at Norwich became the centre of the literary and scientific society which then distinguished that ancient city. Lady Smith, after thirty-two years of wedlock, lived in widowhood for nearly half a century; for twenty-eight of those years she resided in the house built by her father in the High Street of Lowestoft. She had a constitution without a blemish, she hardly knew what illness was till within the last two or three years, she had preserved almost all her teeth, and her eyesight was good enough to enable her to read reports of speeches in *The Times*. Her hearing remained almost unimpaired to the very end. To the time when her eyesight began to fail her handwriting was of that clear and beautiful kind which in these days is seldom seen. Even when her eyes grew dim she continued to write letters to those she loved, and though the lines disclosed the difficulty she had in carrying her pen evenly along the paper, the thoughts and language showed no decay of vigour in her mind.

Lady Smith, upon the occasion of obtaining the centenary anniversary of her birth, gave a dinner to all the aged poor in the neighbourhood, and on the same occasion received from the Queen a copy of "Our Life in the Highlands," with the following inscription in Her Majesty's own writing:—"From Victoria R. to her friend, Lady Smith, on her birthday." The deceased had long been accustomed to pursue literary and scientific matters, and nothing gave her more satisfaction than to be kept abreast of *The Times* with information on such topics.—(Various.)

Our portrait is copied from an early one painted by Sir Joshua Reynolds.

GARIBALDI STRAWBERRY.

I RAISED Garibaldi about twenty years ago, it being the only one selected from several hundreds of seedlings, the seed

of which was gathered principally from Elton Pine and Keens' Seedling. It was sent out by myself in the year 1864. Two or three years previous to that date I foolishly let a gentleman's gardener have some of the plants to test, and, contrary to promise, he distributed them amongst a number of his friends, which consequently disheartened me from bringing it prominently before the public until the year 1866.

In conclusion I have to thank Mr. Thomson for his graphic description of Garibaldi (see *Journal of Horticulture* for November 30th, page 367), which I can only confirm.—THOMAS ARMSTRONG, Nurseryman, Moorville, near Carlisle.

ASPECTS OF NATURE—JANUARY.

"Then came old January, wrapped well
In many veils to keep the cold away;
Yet he quake and quiver like to quail,
And blow his nayles to warn thou if he may,
For they were numbed with holding all the day
A hatchet keen, with which he felled wood,
And from the trees did lop the needless spray."

WIND and rain do indeed blow in the face of January, and have this season quite replaced the frost and snow which are in general characteristic of the month; yet whatever the weather there are certain signs and evidences that winter's torpidity is over. "Nature eva in her sleep is never still." The bright rays of the sun penetrating into sheltered places discover to our view many early plants perking-up through the brown earth and pushing-out green shoots to meet the sun's inviting beams. Most conspicuous and earliest of the wild flowers of the year, the Winter Aconite appears like spots of gold on banks and hedgerows, seeming to be giving back from the still brown bosom of mother earth the bright rays of light stored-up from the stray glimpses of the winter sun; but even the Winter Aconite comes not to us more early than January's own offspring, the Snowdrop, with its pure, pale, pendulous petals, which if not originally indigenous to our woods, has become a true wildling in many places.

In sheltered copes and twining amongst the protecting branches of the Quickset hedge, the wild Honeysuckle may be seen even at this early season putting forth small green leaf buds at every joint along its slender stem. Beneath the warmth and shelter of the withered leaves which strew the wood and copse, the brilliant green of the Primrose plants is hid; but such has been the mildness of the past few months that in many places in our southern counties Primroses are in flower, not, perhaps, the fully-expanded delicately fragrant blossoms that smile in the face of the strong March sun, but sweet flowers nevertheless that are welcome to us for their own dear sake, and doubly welcome as a promise of the beauties that are soon to come. The Hazel hangs out its graceful tassell-like yellow catkins before the month is over, and soon the troops of boys and girls will be peering about every branch to discover the pretty scarlet miniature tufts that give promise of the autumn store of nuts. Already the birds appear to twitter with a blither note as though in hopeful anticipation of pleasures to come, while as yet they have known none of the miseries of snow-covered or hard frozen-up soil. The tiny Chickweed has offered them a constant if simple banquet; nor has it needed much search to discover numerous plants of the homely Groundsel, which puts forth a few flowers in greeting to every fine day. The Chickweed is small and insignificant in appearance, yet three hundred years ago it was noticed and commented on by old Gerard, and thus described by him—"The common Chickweed," said he, in his quaint style, "rises up with stalks a cubit high, and sometimes higher, yet ofttimes she almost creepeth upon the ground. A great many stalks spring from one root, long, and round, and slender, full of joints, with a couple of leaves growing out of every knot or joint, of a light green colour. The stalks are something cleare, and as it were transparent or thorow-shining, and about the joints they be oftentimes of a very light red colour, as be those of Pellitorie of the Wall; the floures be whitish on the top, like the floures of Stichtwort, but yet lesser, in whose places succeed long knops, but not great, wherein the seed is contained." The seeds which now are greedily devoured by our little birds, were not less relished by the songsters of the field in the reign of Henry VIII., for the same writer tells us that little birds in cages, especially linnets, are refreshed with the seed of the Chickweed, "when they loathe their meat."

Our list of January flowers is almost exhausted. One hundred years ago Stratton gave a list of only six as truly belong-

ing to the month, and some botanists call the Snowdrop the Fair Maid of February, and place the Daisy amid the manifold blossoms of March; but the Daisy, like the Chickweed, is an offering of every month of the year. It enamels the meadows by thousands in spring, but does not disdain to show its pretty face here and there even during the present wintry weather, unless the snow falls thick upon the ground, or frost binds-up the earth tight in its icy fingers. At such times when

"The cherished fields
Put on their winter-robe of purest white
The brightness all, save where the new snow melts
Along the mazy current. Low the woods
Bow their bow head; and ere the leopold sun,
Faint from the west, emits his evening ray,
Earth's universal face, deep hid and chill,
Is one wild dazzling waste that buries wide
The works of man."

Then, indeed, we look for even the hardiest and commonest wild flowers in vain; but no sooner does the sun shine and

"Shifting gales with milder influence blow,
Cloud o'er the skies, and melt the falling snow,
The soften'd earth with fertile moisture teems,
And, freed from icy bonds, down rush the swelling streams,"

than we see many evidences of renewed life in trees and plants. The wee modest crimson-tipped flower perks up its little head from the surrounding dark green leaves, and we see

"few frail friendly plants,
Withstand all storms, and 'e'en in this dull month
Look green and cheerful."

But even these few of Flora's train, and the hardy insects such as the winter gnats and a few venturesome beetles that creep from their winter quarters at the invitation of a warm bright day, make nature more cheerful, and prepare us for the time when spring

"Shall rise renewed from winter's sleep,
And bid the flowers re-bloom."

—T. S. J.

APPLE ELECTION.

As a grower of nearly a hundred different kinds of Apples, I have watched with great interest the result of the proposition of our friend Mr. Robeson as to an Apple election. I was afraid the subject had dropped until I saw the letter of "AMATEUR" in this week's paper. I quite agree with him in his decision, but think that three sorts of summer Apples are sufficient for our purpose, as so many other fruits clash with the summer Apples.

I shall be pleased to carry out the election if your readers in the Apple-growing counties of England will kindly forward me the names of fifteen dessert and fifteen kitchen Apples as a succession. I have sent the names of fifteen of each kind—not, perhaps, what I should entirely choose myself, but as showing the different varieties; some are good croppers and others of good flavour. Those I should advise to growers who have limited space I have marked with an asterisk. This small list may satisfy us for our first attempt, perhaps another year we may increase our list; as it is, I have no doubt the number will reach a hundred sorts.—LEWIS A. KILLICK, Mount Pleasant, Langley, Maidstone.

P.S.—If my idea is carried out, I shall be pleased to receive any intelligence on Apples or Apple trees from my correspondents, which when the election is over I will endeavour to put into shape for your readers.

DESSERT.

KITCHEN.

Joaneting	Manck's Codlin
D'voneblue Quarrenden	*Lord Suifield
Summer Golden Pippin	Kewick Codlin
*King of the Pippin's	(Cellin)
Margil	*Masou's Seedling (Stor.)
*Cox's Orange Pippin	Ecklinville Seedling
Hibston Pippin	Harthornden
*Blaubeln Orange	*Beauty of Kent
Cornish Gilliflower	Hedfordshire Foundling
Ashmead's Kernel	Jeas Pool
Court-Pendo-Flat	Winter Quoining
Pearson's Plate	French Royal
Catulle Blanche	*Dumelow's Seedling (Wellington)
Golden Knob	Hambledon Deux Ans
*Sturmer Pippin	French Crab

POINSETTIA PULCHERRIMA PLENISSIMA.

We are all more or less anxious to publish the success that may have attended our efforts in growing any new plant or vegetable; but I think much information may be given and received if growers would state their failures and mishaps when

they occur, and I fear there is none of us who do not meet with them occasionally. The above-named plant was sent out last season by the Messrs. Veitch, and it was spoken of as being grand, not only by the vendors, but by good gardeners who had been supplied with plants for trial, and it was generally described as being far superior to the old scarlet Poinsettia. In the spring I had a small plant of the new variety sent to me from London, a neighbouring gardener also receiving a plant at the same time. I potted mine in the same kind of soil and gave it the same treatment as my old Poinsettias, but I was disappointed with the new one. It was paler in colour and very little more double than the other, and not so large. Some of my old Poinsettias measured 15 inches across the bracts, while the new one did not exceed 10 inches, and my friend was rewarded much in the same way as myself. Will someone who has been more successful state their opinion and mode of treatment? as by so doing they will have the thanks of others as well as myself.—S. TAYLOR, *Castlecroft*.

CULTURE OF PRIMULA SINENSIS.

At the Darlington Gardeners' Institute a paper on the cultivation of the *Primula sinensis* was read by Mr. Wrather of Greencroft West. He observed—The *Primula sinensis*, or Chinese Primrose, is one of our favourite plants for blooming either in autumn, winter, or spring. It is alike suitable for greenhouse, conservatory, or house decoration, and is very valuable for cut flowers. The cultivation of the *Primula* is simple and easy, and will amply repay the attention given to its cultivation, either by gentlemen's gardeners or amateurs. It is suitable for those amateurs who possess a greenhouse with artificial heat, and it is very desirable that they should grow such a floral gem, but it did not appear to be a plant sufficiently attended to or grown so extensively as it deserved to be.

Plants may be had in bloom from October to May by successive sowings from the middle of March to the end of May or early June. Mr. Wrather said he generally sowed in pans in a compost of turf, leaf soil, and sand, with good drainage of crocks covered with the roughest leaf soil. The pans are then filled within half an inch of the top with the prepared compost pressed moderately firm. The seed is sown evenly on the surface, a mere dusting of silver sand or sandy soil is spread over it, great care being taken not to cover it too deeply, as one of the principal causes of failure in raising from seed arises from not observing the latter directions. Another important matter is the watering, and dipping the pans very gently overhead into the water he had found the best plan. For the earliest-sown a temperature from 55° to 60° was recommended, with a slight bottom heat if at the command of the grower. A piece of glass placed on the pans would hasten the germination of the seeds. From the time of sowing to that of potting from six to eight weeks elapse. His first lot is potted into 3-inch pots about the 13th of May, a compost of turf, leaf soil, with sand and horse droppings from the Mash-room bed being used. The pots are then placed in a pit with a south aspect (but shaded) for ten days or a fortnight and kept close. By the middle of June these plants are ready to shift; the same compost, with the addition of cow manure, being again used. The later sowings are ready for shifting into their blooming pots about the middle of August or the beginning of September. When the plants are wanted for the decoration of the sitting-room or hall 5-inch pots are large enough, as they are often placed in vases; but for greenhouse or conservatory 6 or 7-inch pots may be better, as the larger the pot the greater chance of good plants and flowers.

Care must be taken in potting to keep the collar of the plants well up in order to prevent damping-off, which they are apt to do. From this time till wanted for the house or conservatory they should stand in pits or frames with a south aspect, shaded from the sun either by whitewashing the glass or otherwise until the latter part of August. They should be placed on ashes to prevent worms entering the pots. Some practical cultivators recommend a north or east aspect in summer, and doubtless they may be safely grown in either from June to August. In September the earliest ought to have a top-dressing of cow manure and turf. This will cause the flower spikes to stand well above the foliage, produce larger flowers, and make much handsomer plants. When the pots become matted or full of roots liquid manure should be given, at first cautiously and weak. Some cultivators recommend guano, he preferred something less heating and exciting. He used with success liquid manure prepared from cow dung, and

believed it to be the best. Whatever liquid was used it ought to be clear, and should not be allowed to touch the foliage. Unless seed be wanted the pods should not be allowed to remain on the plants.

CARROT CULTURE.

On page 60 "B. G." records a plan by which he secured a supply of Carrots free from the maggot, and asks others to give their experience. In compliance with his request I shall state briefly the method I adopted last season, which proved successful; for here, in common with many other places, it is impossible in ordinary circumstances to grow Carrots in the garden free from that abominable pest the maggot.

Last season, before cropping time, I procured a quantity of peat dross—the refuse of the peat stack, that material being extensively used as fuel in this locality. This I spread 6 inches deep over part of the ground intended for Carrots. I then gave it a slight fork-over, only mixing a very little of the original soil with the peat, the ground having been previously trenched and well pulverised. On this I sowed the Carrot seeds in the usual way, and the result was a crop of perfectly sound and healthy roots, and quite free from the maggot. The sorts grown were Altrincham (select) and James's Intermediate, and the time of sowing was about the end of April.

I have no doubt ordinary peat or leaf soil would answer the purpose as well as the dross. On the portion of ground that had not the peat dressing the maggot did its usual work.—JNO. HARDIE.

I HAVE grown Carrots successfully for the last twenty years. First of all I have the land well drained; next I have it trenched 18 inches deep to provide depth for the roots to grow straight down without being forked. In February or March, according to the weather, I give the ground a dressing of quicklime, one bushel to each pole of ground in the kitchen garden, and I give one ton to each 20 poles of arable land when the Carrots are to be sown in the field. The ground requires forking over and raking in dry weather in the kitchen garden. Ploughing and harrowing answer equally as well in the field. If anything should attack the young Carrots in May they will require to be gently dusted over with a mixture of lime, soot, and wood ashes; and all that is afterwards necessary is thinning the plants and hoeing the ground till the crop is ready to be stored, and that ought to be a month before the frost sets in.—WILLIAM GAIN, *Gardener, Lyneceod.*

P.S.—Those that would grow this useful root
Free from blight and maggots,
Must freely use both lime and soot,
And they will have fine Carrots.

Our garden soil is cold, stiff, and heavy—very unsuitable to the growth of Carrots. I am told for years previous to last season they were invariably injured by the maggot, but last year we had a heavy crop of large clean roots. We sowed James's Intermediate Scarlet as a main crop during the first week of April, on a plot which had been double-dug the previous autumn and heavily manured for the preceding crop. We drew the drills deep, half filled them with wood ashes, sowed the seed, and covered slightly with light dry soil. I have one of your correspondents to thank for my success. I think it was Mr. Abbey who recommended wood ashes to prevent wireworm. I would advise your correspondent "B. G." to give wood ashes a trial.—THOS. COOMBER.

NOTES AND GLEANINGS.

We have received the supplementary programme of the INTERNATIONAL HORTICULTURAL EXHIBITION to be held at Amsterdam from the 12th of April to the 2nd of May. Intending exhibitors must notify their intention to the Secretary-General before the 1st of March. The programme is divided into ten sections.—1, Plants for the stove and temperate house; 2, Greenhouses and conservatory plants; 3, Open-air plants; 4, Arrangements of plants and flowers; 5, Fruits, vegetables, and seeds; 6, Industry as applied to horticulture; 7, Art, as applied to horticulture and botany; 8, Progress; 9, Horticultural science; 10, Awards, medals, and certificates to native and foreign gardeners. Many hundreds of medals, diplomas, and certificates are provided, the value of the medals ranging from upwards of £14 to 8s. Exhibitors have the option of receiving money instead of medals, provided they give a written

notice to that effect on or before March 15th. The sections are divided into several sub-sections, and a great exhibition is anticipated. The programme is signed Hoefft van Velseo, President; J. B. Groenewegen, second Secretary.

In order to afford adequate convenience for expected large importations of plants from his foreign collectors Mr. B. S. WILLIAMS is enlarging his nursery at Holloway and erecting new structures. The general stock of plants now in the nurseries is in superior condition. Amongst the new plants *Arucaria Goldiana* is being largely increased, and a large stock is being established of the new and elegant *Panax laetnatus*. An Australian Fern, *Dennistadia davallioides* Youngii, is elegant and stately, and the fine *Gleichenia rupestris* glaucocens, and *Mendelii*, are very noticeable. Amongst the stately Tree Ferns in the conservatory *Dicksonia Youngii* is growing with great freedom and elegance; and especially attractive amongst the Palms are *Areca lutea* and *Verschaffeltii*, *Kentia australis*, *Stevensonia grandifolia*, a new *Martinezia* with marbled stems, and *Drahea filamentosa*—a pair of fine specimens from California. Many choice Orchids are flowering, including *Laelia Dayii* and *superbiana*, *Odontoglossum*, *Zygopetalum*, and *Cypripedium*; and an extensive importation of *Odontoglossum cirrhosum* and *Oneidium Rogersii* is being established. The hardwooded plants—*Ixoras*, *Camellias*, *Heaths*, &c.—are equally worthy of notice for their health and cleanliness. In "another department" is the magnificent prize of china—timepieces, urns, and candelabra—from the Crown Prince and Princess of Germany, the premier prize of the Cologne Exhibition; another honour of note being the King's gold medal which was awarded at the last Brussels Exhibition.

At the last meeting of the Committee of the NATIONAL ROSE SOCIETY a satisfactory statement as to the progress of the Society both as to funds and members was made by the Secretaries. Amongst the announcements made was one which we are sure will be hailed as a token of success—namely, that Mr. Cranston of Herford had made the munificent offer of a challenge cup of the value of fifty guineas to be competed for by amateurs, the cup to be won in three years: thus, if Mr. A wins it in 1877 and Mr. B in 1878, then only A and B are to compete for it in 1879. The schedule was arranged, and a circular drawn up by the Secretary was approved and ordered to be printed and circulated. It was the opinion of all present that a prosperous future might be safely relied upon.

We have just been informed that the GRAND QUINQUENNIAL HORTICULTURAL EXHIBITION at GREENT will be held in April, 1878. This will no doubt prove equally attractive with those that have for so many years brought together horticulturists from all parts of Europe, and we trust that our national horticulturists will bestir themselves and send such a representation of British horticulture as will do credit to the country.

The Judges in the horticultural department of the Philadelphia International Exhibition, 1876, recommended to the United States Centennial Commission for awards a "very choice collection of NEW AND RARE PLANTS, well grown and in excellent condition after trans-shipment of such delicate articles—an exceedingly creditable display," exhibited by Mr. B. S. Williams; also "a small collection of Filmy and other Ferns," exhibited by the same nurseryman. "A very rare collection of Rhododendrons, Hollies, new and rare Conifers, broad-leaved evergreens of the best kinds for lawn decoration," exhibited by Messrs. Jas. Veitch & Sons, Chelsea; also "an exhibit of evergreen plants, consisting of the best varieties of Rhododendrons, Hollies, *Aucubas*, &c., for fine growth and careful training, and unique in new kinds," shown by the same firm. A medal was also awarded to Mr. W. Bull for "coloured plates of flowers."

The next INTERNATIONAL POTATO SHOW will be held in the gardens of the Royal Horticultural Society some time in September next, and the prize list will probably include a set of the Society's medals. The promoters of this Show offered it to the Society in the first instance, but Lord Bury's Council failed to perceive that South Kensington was the proper place for it.

THE GALLOWAY ROSE SHOW is to be held this year at Newton Stewart, Wigtownshire, on the 17th of July.

THE FLOWER MARKET at COVENT GARDEN is attractive at any period of the year, but especially so during the opening days of spring. Bulbous plants—Tulips, Narcissuses, and Hyacinths

are now offered in large numbers. *Cytisuses* are "coming in," *Callas* are freely represented, and *Azaleas*, small plants with dense heads of flowers, are exceedingly gay. The most effective bouquets are composed of white *Camellias*, *Eucharises*, and *Rose huds*, with a few *Giant Violets* between the larger white flowers, and a veil of *Snowdrops* arranged over the entire bouquet, the "drops" being an inch and more above the other flowers. The fringe as usual is of *Adiantum cuneatum*. The favourite "button-holes" are composed of a cream-coloured *Rose bud*, a single pip of white *Hyacinth*, a spray or two of *Lilies* and *Fern*.

— We are informed that *Messrs. James Veitch & Sons* of Chelsea have obtained by public tender all Mr. Laxton's SEEDLING PEAS and STRAWBERRIES.

— A KENTISH correspondent informs us that the NUT TREES are blossoming with great freedom, and are now quite ornamental from their immense crop of male catkins. These, he says, are coveted for decorative purposes, sprays of them possessing a "sober elegance" when placed in vases that few flowers can equal. The small inconspicuous female blossoms are also plentifully represented, and good crops of nuts are anticipated.

— We have received from *Messrs. Letts & Son* a set of their well-known DIARIES. They are of various sizes, and available for every purpose, from being carried in the waist-coat pocket to being placed on the counting-house desk or study table. Besides the diary they all contain a good almanack, and the larger ones, especially No. 5B, also contain a large amount of valuable commercial information. We can strongly recommend these as being highly useful.

— THE DARLINGTON GARDENERS' INSTITUTE was founded by E. Pease, Esq., brother to the member for South Durham. In addition to a valuable horticultural library he generously gives £50 per annum for its support. The Institute contains, besides the necessary apartments for the librarian, library, reading-room, and smoking-room. Papers are read during the winter months once a fortnight. There is also a fruit and floral meeting held (part of the year) weekly. The reading room is well attended, especially by the young gardeners. E. Pease, Esq., is President.

— We have received from Mr. R. Gilbert, Burghley Gardens, near Stamford, some flowers of DOUBLE PRIMULAS. The individual pips are $1\frac{1}{2}$ inch in diameter, and are perfectly double, every petal also being deeply serrated or "fringed." The flowers are bluish white, some of them being delicately and others more heavily blotched and flaked with rose. The darker types of flowers are rosy carmine, deepening towards the centre, the reverse of the petals being bluish pink. As fringed varieties of double Primulas we have never seen any flowers superior to the example now brought to our notice.

— MR. F. H. FROUD writing to us from the Gardens, Hawley House, Kent, on the MILDNESS OF THE SEASON, states that he has been gathering *Aconites*, *Snowdrops*, *Crocuses*, *Hepaticas*, and other flowers from the open garden during January. He gathered the last *Roses* on January 5th, one a beautiful *Gloire de Dijon*, as good a bloom as he ever cut in summer. It was cut from a plant trained to a west wall rather sheltered. A white *Camellia* planted out of doors with five others also in a sheltered position facing north, is now (February 6th) in flower, and two others are in a very forward state. *Deciduous* and other flowering shrubs are fast bursting into leaf and flower, and bulbs of all kinds are appearing through the ground, and vegetation generally is in a very advanced state.

— We have received a copy of the new and revised edition of Cassell's "Household Guide," and we can testify that the directions and the plates, coloured and plain, justify the statement that it is useful in "every department of practical life."

— WHOEVER wishes for full particulars relative to the colony of Victoria should read Hayer's "Notes on Victoria."

— IN Mr. Burley's, Herford Road Nursery, Bayswater, there is now to be seen a fine specimen of *ASPIDISTRA PUNCTATA*. The *Apidistras* are remarkable for producing their flowers under the soil, where they grow and mature and die—seldom coming to the daylight. The flower of *A. punctata* is purple in colour, has six lobes and six anthers (sessile), and a stigma like that of a Poppy.

— As instances of the MILDNESS OF THE WEATHER AND WINTER IN SOUTH WALES, we recently noticed in the extensive

and beautiful pleasure grounds at Margana Park, Glamorgan-shire, Hawthorn in flower, *Camellias* as standard bushes in the open air with fully expanded blooms, early *Rhododendrons* showing colour, and *Coronilla glauca*, which is generally treated as an inmate of the greenhouse, covered with its yellow flowers in the open border, the first and last-named of these plants having been in bloom since Christmas.

— THE PROGRAMME OF THE ROYAL HORTICULTURAL SOCIETY for the ensuing year will contain a special invitation to local horticultural societies to subscribe, and to receive in return medals of the Royal Horticultural Society for distribution at their local exhibitions, together with the privilege of appointing one of their committee to represent the society at all meetings, &c.

— At the Annual General Meeting of the ROYAL HORTICULTURAL SOCIETY held on the 13th the following candidates were proposed and duly elected Fellows of the Society—viz., Jas. Aldous, Madame Bassano, Mrs. Bentham, Richard Dean, William Hume, H. W. Durant, Col. H. P. Goodenough, Peter Grieve, Mrs. Hargreaves, Dowager Lady Keane, Miss Longman, Mrs. McGarel, R. B. Postans, Jno. C. Quennell, Mrs. Robertson, G. Smith, G. D. Stubbard, G. D. Whatman, Jas. Baily, Col. A. Croll, Robert Drummond, J. D. C. Farrell, Hon. J. T. Pienne, Thos. Lyon, Sir H. St. John Mildmay, Bt., Sir Julian Pauncefote, Mrs. Laurence Peel, T. Francis Rivers, Mrs. Culme Seymour, Viscountess Templeton, Geo. A. H. Tucker, Count Guidoboni Visconti, Robt. Wake, Edward Webb, E. A. Webb, Lieut.-Col. Gould Weston, Mrs. W. Burbury, Hon. Olivia Calthorpe, Mrs. A. Croll, &c.

— On the 27th of January died Mr. WILLIAM MELVILLE, aged sixty-six. He was gardener for thirty years to the Earl of Roseberry, Dalmeny Park near Edinburgh. Mr. Melville was an ardent horticulturist and a keen hybridiser. In his youthful years the Pansy was one of his favourites, and he was one of the first to improve it. In his later years the Brassica family attracted his attention, and he raised the Roseberry and Albert Sprouts also many fine forms of variegated Kale. He was also the raiser of the Champion Muscat Grape, a variety seldom seen now, but when well grown no other of the Black Muscats surpasses it in flavour; the berries are very large, but resemble in colour the Grizzly Frontignan. Mr. Melville resigned his situation in 1869, and received a handsome annuity from Lord Roseberry. He retired to Jersey, where he managed a range of vineries on his own account very successfully at Tynville St. Aubyns, where he died. He was a man of pleasing manners, very fond of entering into conversation with gardeners like-minded with himself. He was the father of fifteen children, whom he educated and trained to good positions in life. Six of his sons follow the profession of gardeners; let us hope that they will emulate the example of their parent, and if they cannot all attain to the same height in their profession as he did, they can deserve success.

— On the 4th inst. Mr. JOHN HARRISON, nurseryman, of Darlington, Seorton, and Catterick, died in his own home at Catterick, at the age of seventy-six. Mr. Harrison stood very high as a Rose-grower, and was well known as a prizetaker at exhibitions. His *Roses* were in request over the kingdom, and he also shone as a cultivator of *Dahlias* and *Hollyhocks*. Mr. Harrison was a native of Yarm, and had been in business at York before he took the Darlington Nursery. Those who were well acquainted with him say that his love of *Roses* dated from a very early age, and he has been known as a practical cultivator of that queen of flowers for sixty years at least.

— AN American paper says the art of MAKING SCARFCROWS should be studied. It is an imaginative bit of work to make an artificial hawk from a big potato and long goose and turkey feathers. The maker can exercise his imitative skill in sticking the feathers into the potato so that they resemble the spread wings and tail of the hawk. It is astonishing what a ferocious-looking bird of prey can be constructed from the above simple materials. It only remains to hang the object from a tall bent pole, and the wind will do the rest. The bird makes swoops and dashes in the most headlong and threatening manner.

— At the last meeting of the LINNÆAN Society a pot of growing WHEAT was exhibited by Mr. R. Irwin Lynch, which had been sown from the grain left in *Polaris Bay*, 81° 38' N., by the American Expedition. The grain had been exposed to the winter frosts, 1872-76, yet the above sample grown at Kew

gave 64 per cent. as capable of germination. A grain of Maize among the Wheat also germinated.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 14TH.

At the meeting held on Tuesday the President of the Society acknowledged the aid of the principal nurserymen in rendering the meetings and shows attractive. The contributions had been well merited, and liberal contributions of plants arranged in the conservatory to-day constituted an extensive and beautiful spring exhibition—a good augury that the year is not to be a barren one, and that future gatherings will be worthy of extensive patronage. The display was arranged on tables occupying the entire length of the conservatory; and when we say that the best examples from such sources as those of Messrs. Veitch, Williams, Ball, Turner, Wills, and Osborn, besides those of private growers, were forthcoming, including a large collection of fruit from Leonardlee, the value and character of the show, for show it was, will be understood.

FRUIT COMMITTEE.—Henry Webb, Esq., V.P., in the chair. Mr. Joshua Atkins, gardener to Col. Lloyd Lindsay, sent three very fine bunches of Black Alicante Grapes, which were awarded a cultural commendation. Mr. Harrison Weir, of Weirleigh, Kent, exhibited a dish of Mrs. Pince's Muscat Grapes, which were grown in a house without artificial heat. The flavour was excellent, and the fruit was in fine condition. A cultural commendation was awarded. Messrs. Veitch exhibited two seedling Apples they received from France and Lancaster, but they were not of superior quality. Messrs. Veitch also exhibited a large seedling Pear from Acton, which was not considered of any merit. Mr. Z. Stevens, gardener to the Duke of Sutherland at Trentham, sent a tree of Calville Blanche Apple in a pot laden with fruit. These trees are used for table decoration at Trentham. The fruit was very fine, and, though somewhat past its best, was very good. A cultural commendation was awarded. Messrs. Stuart & Mein of Kelso sent a punnet of the Lily-white Seakale, which is of an uniform bright yellow colour, and not tinged at the points with purple, as the ordinary variety is. It was decided that before an opinion could be formed of its merits it should be grown at Chiswick side by side with the old variety, and when cooked submitted to the Committee. Mr. James Batters, gardener to Mrs. Willis Fleming, Chilworth Manor, Romsey, sent a basket of Snowflake Potatoes grown in 7½-inch pots. A cultural commendation was awarded. Mr. Batters also exhibited a dish of Mushrooms. A couple of specimens of Limes grown at Nettlescombe, Somerset, by Sir Walter Trevelyan, were exhibited by Mr. David Wooster. A very fine collection of Apples and Pears was exhibited by Mr. Sidney Ford, gardener to W. E. Hubbard, Esq., Leonardlee, Hordsham, and the Committee recommended a Davis bronze medal.

The Fruit Committee—having had under their consideration the correspondence in reference to the Grapes exhibited by Mr. Bell of Clive Hoase, Alnwick, before them on December 6th, 1876—desire to place on record their regret that Mr. Bell should have withheld the facts as to the origin of the Grapes, and more particularly draw attention that in his letter to the Committee with the Grapes he stated the parentage was "a cross with Black Morocco, and a seedling raised, I understand, at Wordley," and in his letter of January 25th, 1877, in *Journal of Horticulture*, he affirmed "it is a founding, the parentage and connections of which none can vouch." Had the Committee known at the time of making the award the real facts of the case they would not have recognised the name of Clive Hoase Seedling, and which they now cancel.

FLORAL COMMITTEE.—Mr. E. S. Williams in the chair. Messrs. Veitch exhibited a large group of plants, gorgeous by a collection of nearly a hundred Amaryllids, in colours ranging from rich crimson scarlet to creamy white, some of the petals being tipped, others mottled, and nearly all of great substance and superior merit. A first class certificate was awarded for Princess of Teck, flame scarlet. The Orchids in this collection included Lycaste Skinnerii in several varieties, and *L. cruenta*, highly perfumed; *Lælia pulcherrima alba*, very beautiful; *Angrecum sesquipedale*, with five flowers; *Phalenopsis*; *Odontoglossum* in several species and varieties; the singular *Masdevallia Wallisii* (chimeras), to which a first class certificate was awarded. *Chysis Chelouai*, a fine cross from *C. hevis* and *C. Linnæi*; *Cypripedium*, including *C. Schlimmii album* and *C. Haynaldianum*; *Dendrobium Domini*, and *D. eudochæis*, the latter being a distinct cross between *D. japonicum* and *D. heterocarpum*, a fine plant of *Dendrobium plumaceum*, &c. In the centre of the group a striking lilaceous plant—*Euryclis australis*—commanded much attention. It somewhat resembles an Eucharis, but each flower spike, which is stout and 6 inches in height, is surmounted with a dozen white flowers with yellow stamens. This will be invaluable as a decorative plant, and is almost sure to find its way into most conservatories. The group was fringed with superior Cyclamens and Lilies,

and contained densely bloomed examples of *Rhododendron Early Gem*; also a fine form of *Cydonia* (*Pyrus*) japonica alba, much superior both in the size of the flowers, purity of the petals, and free flowering, to the old white. The new variety was introduced by the late Mr. J. G. Veitch, and must be pronounced an acquisition; a first-class certificate was awarded. Messrs. Veitch also exhibited flowering sprays of the new shrub *Azara microphylla*; *Cornus* variegata, covered with small orange-coloured flowers; and a collection of cut blooms of *Camellias*. A silver-gilt medal was recommended for the collection.

Mr. Ball staged a very commanding group, every plant being choice and in superior condition. The background was composed of *Cycads*, *Eucapharises*, *Draenas*, *Palms*, *Florumams*, &c., at the front of which were Orchids and ornamental-folaged plants. Amongst the Orchids were *Odontoglossum cirrhosum*, *Lycaste Skinnerii* rebella, very rich; *Uropidium Lindenii*, *Odontoglossum Roselii*, *Dendrobium speciosum* and *Wardianum*, *Cypripedium Harrisonianum*, and a bright yellow *Cypripedium*, resembling *C. pubescens*. To one fine plant in this group—*Cycas media latissima*—a first-class certificate was awarded; a similar award also being given for *Croton Mortii*, a bold and stately plant with well-coloured foliage; and a silver medal was recommended for the collection.

Mr. Williams exhibited Orchids, including *Dendrobium nobile* and *Wardianum*, *Lælia superbens*, *Lycaste Skinnerii*, remarkably well bloomed; *Odontoglossum cordatum*, *Zygopetalum crinitum*, and *Cypripedium Dayanum*, insignis, and villosum; also *Palms*, *Cyclamens*, and plants of a splendid strain of *Primula sinensis fimbriata* alba. A vote of thanks was awarded.

Mr. Wills staged a large collection, arranged in a bold free style, which is an agreeable relief to the orthodox formalism of flat smooth groups. The large plants consisted principally of *Palma*, the groundwork being composed of small flowering plants and *Adiantums*, with an irregular fringe of *Ficus repens* and *Isolepis gracilis*. A vote of thanks was awarded.

Messrs. Osborn & Sons, Fulham, exhibited a small collection of choice *Palms* and *Aralias* suitable for table decoration. The plants were remarkably healthy and clean, and meriting and receiving the thanks of the Committee.

Mr. Turner, Slough, exhibited well-bloomed *Camellias*, the old *Douglasii* being conspicuous by its numerous and richly marbled flowers. Fine standard and heavily berried *Acacias*, a standard umbrella-like plant of *Euconymus latifolius* variegatus, and ornamental pyramid *Ivies*. A distinct and excellent group for which a vote of thanks was given. Mr. R. Dean, Ealing, exhibited a collection of *Primroses* (some of them *Polyanthuses*), in pots. A new white, *Virginiana*, *P. altaica*, *Rosy More*, *Brilliant*, and others were very effective. Mr. Dean also exhibited *Victoria Regina* Violet in good condition. Mr. Aldons also staged a compact collection of flowering plants, and both exhibitors received the thanks of the Committee.

Mr. F. Newman, gardener to W. H. Micholl, Esq., Highgate, exhibited a very fine group of Orchids, including upwards of a dozen *Phalenopsis*; *Colax jacobus*, distinct from the purity of its sepals and its heavily blotched petals; *Vanda Cathcarti*, *Miltonia Warszewiczii*, *Odontoglossum triumphantis*, and superior *Dendrobium*, *Wardianum*, *crassinode*, and *lituiflorum*—an extremely fresh and bright collection, for which a silver medal was recommended.

Mr. James, gardener to W. F. Watson, Esq., Redles, staged nearly a hundred *Cyclamens*, excellently grown, and in superior varieties; also a dozen seedling *Cinerarias*, remarkable alike for the vigour of the plants and the high quality of the varieties. A silver medal was worthily recommended for this excellent collection. Messrs. F. & A. Smith, Dulwich, also staged good *Cinerarias*.

Mr. Ollerhead, gardener to Sir Henry Peek, Bart., Wimbledon Hoase, staged a small but very good group of Orchids, *Vandas suavis* and *tricolor*, *Dendrobium Boxallii* with fifty-three flowers, *D. crassinode*, *Phalenopsis*, &c. and received the thanks of the Committee. A similar mark of acknowledgment was made to Mr. Roberts, gardener to W. Terry, Esq., Peterborough Hoase, Fulham, who staged a small collection of Orchids, *Coleogyne cristata* and *Godylersia diolor* being in very good condition.

Sir Trevor Lawrence, Bart., Burford Lodge, Dring, exhibited some choice Orchids, botanical commendations being awarded to *Cestanthum sonna*, distinct and powerfully perfumed; and *Spathoglottis Lobbi*, pale yellow; and a first-class certificate to *Odontoglossum Cervantesii* var. *decorum*, a great improvement on the species. *Miltonia Warszewiczii pallida* in this choice group was very beautiful. A first-class certificate was also awarded for *Calanthe vestita rubra oculata*, very vigorous and fine.

A cultural commendation was awarded to Mr. Denning, gardener to Lord Londesborough, for a densely flowered plant of the Cobweb *Dendrobium*, *Dendrobium teretifolium*; and a botanical certificate for *Masdevallia macrura*, a robust and remarkable species from the State of Columbia. Mr. Lasing, Forest Hill Nurseries, exhibited forced Lilacs; and Mr. Clarke, Twicken-

ham, fine baskets of Cyclamens, and received a vote of thanks. A first-class certificate was awarded to Mr. Edmonds, Hayes Nursery, for Cyclamen persicum album magnificentum—a compact plant, but not a compact name.

Prizes were offered by Messrs. Veitch for Poinsettia pulcherrima plenissima, and were awarded—first to Mr. Orllerhead, and second to Mr. Tubbs gardener to B. W. Smith, Esq., Hampstead. Mr. Orllerhead's specimen was fairly good, but the others were only indifferent.

In addition to the above collectors the conservatory was rendered attractive by a well-grown assortment of flowering plants from the Society's Garden at Chiswick.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

The weather during last week was very fine, and as the borders had an untidy look with the manure dressing on the surface it has been dug in. Pear trees are in a very forward state, and a few weeks of fine weather will cause the buds to burst their scaly coverings. It would be better if the weather was colder, as there is always a great risk in an early-blossoming period.

It is time that nailing was quite finished, as the season is so early, and when the buds are too much advanced they are frequently rubbed off during the operation. All the work ought to be done in a careful manner, and if many decaying branches or any that are badly gummed have to be removed, it may be better to loosen all the branches from the walls and re nail them regularly over the required space. As a rule wall trees are too much crowded with young wood, and when this is the case fine well-coloured fruit cannot be expected. Peach trees are usually left until the last, and after all useless wood has been removed the trees should be washed with strong soapy water if they are infested with any insect pests, taking care not to injure the buds which are now well advanced. Pan-trained trees have usually the weakest and most unsatisfactory growth near the base of the wall, and the growths improve towards the top of the tree. Sometimes it is better to remove the weak under-growths and bring down those nearer the top. This may be done a little every year, and the trees will be kept in better condition thereby. All the main branches ought to be laid into their places first, the intervening spaces to be furnished with the smaller branches and bearing wood. The main branches of Peach and Nectarine trees are destitute of buds of any sort, and to furnish the walls regularly with bearing wood it is desirable to train wood of last season close to or over the bare stems. Walls well furnished with healthy fruitful wood, skillfully trained, are a source of continual enjoyment; badly trained trees, with the branches running into each other, are eyesores and a disgrace to any garden, although otherwise it may be well kept.

Fruiters started early in January are throwing up fruit very freely. With a high temperature and a moderately moist atmosphere they may be expected to ripen-off in June and July. Smooth-leaved Cayennes and Charlotte Rothschild do not throw so freely as Queens, but they also are in some cases showing fruit. It is a good plan to water with weak manure water after the fruit shows. It has been recommended by some to withhold water until the fruit shows, but when water is withheld from plants that are in a moist atmosphere and high temperature they are apt to suffer injury. If it is desirable to throw all the plants into fruit at one time, and some of them are erratic, give just sufficient water to moisten the ball, and do not water again except so far as to prevent the young fibres from receiving injury. This is the evil to be avoided in the case of keeping any plants too dry for a purpose, for if the points of the small hair-like roots are killed, the chances of success are weakened to an enormous extent. We have not yet potted the young plants raised from rootless suckers in August last year. We find it necessary to grow them in a low pit where the temperature cannot be kept up over 55° in cold weather, whereas to grow the plants well 60° to 65° would be better. We hope to have an opportunity to pot them in a week or two; they are now growing very well in 6 and 7-inch pots. If possible they will be repotted in 11 and 12-inch pots, using good turfy loam with a fifth part of decayed manure and a 9-inch potful of crushed bones to each barrowload of loam. We were very unsuccessful with the Pines when driven to use our own light sandy loam, but when a good yellow slightly unctuous loam was obtained an improvement was evident in larger and better fruit. In our own soil the growth was all that could be desired, in fact dead better than in the mere clayey loam, but fruit did not show so quickly, and when it did the pits never swelled well; it seemed that all the potting material became exhausted in the formation of large leaves. See page 87 for instructions as to air-giving, &c.

PEACH HOUSE.

This is excellent weather for fruit setting. Indeed it is a

question whether January has not been a good month for forcing Peaches, notwithstanding the enormous rainfall. The weather has been mild, and air could be admitted freely. Windy days were prevalent, and it has been stated that in countries where the Peach does well as standards in the open air cold winds are frequent when the trees are in flower, yet the blossoms set well. A distinction, however, must be made between cold winds and frosty winds; air-giving must be conducted with caution when their icy breath freezes the ground under our feet. In the earliest house the fruit must be all well set, and it ought to be freely thinned-out before it injures the trees. The first thinning should be made when the fruit is well set, and the last at the commencement of stoning. Syringe freely on fine days, and as in the case of Pines, close early to utilize sun heat. The great importance of making sure that the inside borders are not too dry has been frequently urged; if the roots are in an over-dry medium failure is certain. Even this may occur when the gardener thinks that everything is all right. A rich dressing of loam and manure is placed over the surface, with the result that the surface waterings keep this constantly moist, while the soil beneath may be dust-dry: see that this is not so. Of course where the roots are outside and not protected in any way, except by a covering of leaves or some similar material, the soil will be wet enough. See that the Peach aphid does not gain a foothold on the leaves. Syringing will not destroy this pest. Fumigating with tobacco smoke is the best remedy, but it is sometimes necessary to smoke three times before the insects succumb.

Strawberries in Pots.—The first flowers of Black Prince were open some time ago, but owing to the temperature of the house having been too high and insufficient ventilation they have not set well. The first sign of anything being wrong was the petals not dropping. When the petals hang on and increase in size it is likely to follow that the centre will be a blank. Later blooms have set well, for as soon as the state of matters was observed the temperature was lowered a few degrees, and more air was admitted. We now water freely with manure water until about the time of the fruit colouring, when the water is withheld. Succession plants may be introduced into a higher temperature at once, as they are now on the move in cool houses. Plants intended to fruit just before those out of doors, are stored on the shelves in the orchard house; they require water about twice a-week.

FLOWER GARDEN.

Florists will now have plenty to do if they have full collections of what are usually designated florists' flowers. Auriculas, if not already done, must be surface-dressed by removing an inch or so of the old surface soil and replacing it with some rich material. We began this work on our own collection the last week in January and finished last week. Some few of the plants were wintered by way of experiment. The Auricula wakes up from its winter sleep about the end of January or first week in February, and root as well as top grows with unwonted vigour, and it may be that if potting is performed at this time a good result would follow. The plants will at least make vigorous growth. All rootless offsets put in about September or early in October, if they remain through the winter without producing any roots, they will strike out roots at this time and start into free growth. A quantity of offsets were also put in at the time of surface-dressing the pots; they root well in open frames at this time, and ought to be put in round the sides of small pots in loam, sand, and leaf soil in about equal proportions. There is every promise of an early bloom this year, as many fine trusses are already far advanced. The plants ought not to suffer for want of water after this time. And ventilation is rather a ticklish question. The plants must have plenty of air, but the trusses are weak on the stem and likely to lean over. Although we tie them to neat sticks for the flower shows, these are not wanted on the home stage, except in the case of a very few weak-stemmed sorts. The Manchester growers disdain sticks, even at an exhibition, and rather than show with them they will unstick the plants in the morning and place sticks to them again at night.

We ran the hoe through the ground amongst Tulips. These are coming up strongly. We have no blanks, although there has been so much wet that a fine bed of the old Giant Drompton Stock has been quite destroyed. On the first favourable opportunity a bed of Pansies will be planted out; these have been wintered in pots and the pots placed in a cold frame. Carnations and Picotees are making a start into growth, and if the present mild weather continues we shall begin potting-off the plants.

We are putting in cuttings of any bedding plants of which the supply is not sufficient. Verbenas, Ageratum, and other plants of a similar free-growing habit are better as grown from spring-struck cuttings. All the zonal Pelargoniums have been potted-off or the plants have been planted in boxes. Stocks and Asters, if they are intended for early flowering, should now be sown in hotbeds, and all tender or half-hardy annuals may be treated in the same way. Roses are starting into growth, but we have not yet ventured to prune them.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

W. Heuder & Son, Plymouth.—*Illustrated Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Laird & Sinclair, Dundee.—*Catalogue of Seeds, Roots, and Garden Requisites.*

André Leroy & Angers (Maine et Loire), France.—*Price Current of Vegetable, Flower, and Agricultural Seeds.*

Harrison & Sons, Leicester.—*Catalogue of Choice Seeds for the Garden and Farm.*

B. S. Williams, Victoria and Paradise Nursery, Holloway, London.—*Catalogue of New Plants.*

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (S. W.).—Cuthill's "Market Gardening Round London." We know of no work devoted to seed-growing.

RED-SKINNED FLOREBALL POTATO (H. Hill).—Although it does not succeed in your soil and situation it may on others. We are pleased to read that you have established an Amateur Gardeners' Society at Astwood Park.

LAWN MOSS (A Constant Subscriber).—From now to the end of March, in mild weather, lay the lawn well scratched with a new iron rake so as to bring up and remove the moss. The more you remove the better; clear it off. In March give a good dressing of decayed manure or rich compost, spreading it evenly, and not more than half an inch thick. In April rake again well with the iron rake, removing any rough and unsightly portions of the manure and any stones, and with an early prospect of rain sow over it evenly 5 lbs. *Pestuca duriacina*, 12 lbs. *Cynosurus cristatus*, 5 lbs. *Pestuca tenuifolia*, 8 lbs. *Poa nemoralis* sempervirens, 8 lbs. *Trifolium repens*, and 4 lbs. *Trifolium minus*, in mixture for 1 acre. If you are troubled with birds, rake lightly with a wooden rake after sowing; if not, simply roll well; rolling should also follow the sowing. Let the grass grow until the middle or end of May, then mow with a scythe, and afterwards keep under with the mowing machine. If the lawn is wet the moss would be subdued by draining.

BRIARS (Tyro).—I do not, of course, know who your correspondent's brother is, but I would recommend him to go into some large nursery, and if he does not find a very large proportion of the Briars there "green" I will own that I am entirely in the right. The subject connects with Rose-growing. The varieties of Briar are legion; but the younger they are, provided they have sufficient stamina and stoutness, the better. Some Briars brown in colour are very good, but my experience proves that the green are the best. A man once brought me a Briar 6 feet high as green in colour as I could get. Would "Tyro's" brother say that it was only one year old?—WILL SAVAGE.

BARBAROSSA AND GROS GUILLAUME GRAPE (Devout Reader).—The Gros Guillaume Grape was introduced some years ago under the erroneous name of Barbarossa, and this has adhered to it more or less ever since, but it is being gradually dropped. The true Barbarossa is not in this country, though one very similar to it is occasionally met with, called Gromier du Cantal.

CABRET-BEEDING PLANT (J. Carrick).—The only low-growing, dark-foliated, hardy plant that occurs to us as being suitable for your requirements is *Oxalis corniculata* rubra. Seed may be sown now, and the seedlings be raised in heat and subsequently hardened-off the same as *Lobelia* and other tender bedding plants. The *Oxalis* grows about 3 inches high, and the foliage is of a dark coppery brown colour. The plants grow freely in almost any soil, and are rarely or quite hardy.

SPHAERUM FOR ORCHIDS (E. J. B.).—It should be used in a fresh state though many prefer it dried, as it is then more readily chopped-up, and the dust or smaller particles can be rejected the more readily.

SEEDS FROM INDIA (J. L.).—*Poinciana regia* is a stove evergreen shrub or tree, thriving well in turfy loam, with a third of leaf soil or thoroughly sieved manure, and a sixth of sand. A little peat may be added if the loam be deficient in fibre. The seeds should be sown in a brick bottom heat (90°), in early March, previously stepping them in water at a temperature of 110° for twenty four hours. *Lagerstromia speciosa* is an evergreen stove shrub-like tree, succeeding in peat and loam in equal parts with a half part of leaf soil and a free admixture of sand. The seeds should be sown in a brick bottom heat early next month. *Combratum grandiflorum* is a stove shrub, succeeding in a compost of peat and loam. It is necessary that the seed be sown in brick heat to spring, drying the plants in moist heat during the summer, keeping them under glass in winter. The seedlings should be potted-off singly when a large enough.

PACHINO CIMONANTHUS FRAGRANS (H. G. M.).—Cut it back after flowering, and restrict the summer pruning to the removal of irregular growths.

OXALIS VESICULOR NOT FLOWERING (Idem).—We can only attribute their not flowering to the crowded state of the bulbs. They should have at least twice the pot room, and be given a good season of rest, not withholding water until the growth ceases, repeating when growth commences. A compost of turfy loam and a little peat and leaf soil will grow them perfectly. They should have a light airy position in a greenhouse, watering freely during growth, but not making the soil sodden.

TODEA SERRATA (Todea).—The old fronds usually go off about this time, or when the young fronds are being made. The old fronds will require to be cut away after the plant has furnished itself with new growth. Continue it in the cool house, in which it will do better than in an intermediate house.

PLANTS FOR INTERMEDIATE HOUSE (An Old Subscriber).—The Vines will give you all the shade required during summer; and in winter, from October to March inclusive, no shading whatever is required. Your house will be suitable for such flowering stove plants as *Allamanda nerifolia*, *Apelandra aurantiaca*, *Rozelia*, *Centropogon Luceana*, *Conoclinium lantianum*, *Dalechampia Boziana*, *Passiflora*, *Epiphylum truncatum* var., *Erantemma pulchellum*, *Euphorbia splendens*, *Franciscia calycosa major*, *Gardenia florida*, *Inantophyllum miniatum*, *Lasiandra maritima*, *Lasiandra floribunda*, *Libonia floribunda*, *Mocochetum esuferum*, *Plumbago coccinea superba*, *Scutellaria Mocciniana*, *Rogiera grattissima*, and *Vinca alba oculata*. Variegated or foliage—*Cyperus alternifolius variegatus*, *Drosera striata*, *D. bicolor*, *Franciscia confertiflora*, *Franciscia variegata*, *Piptotis (Gymnostachyum) Pearcei*, *Fandanus elegantissimus*, *Panicum variegatum*, *Panicum thalictroides*, *Pavetta borbonica*, *Sauzebia nobilis variegata*, *Maranta zehra*, and *Tillandsia aculis zehra*.

PLANTS FOR LARGE CONSERVATORY (Leodiensis).—1. *Foliage plants*.—*Beaucarnea recarvata*, *Chamaecyparis Fortunei*, *Dasylium gracile*, *Cordyline indivisa*, *Livistonia australis*, *Dracaena elegantissima*, *Dicksonia antarctica*, and *D. squarrosa*, *Florimium tenax variegatum*, *Yucca aloifolia variegata*, and *Y. quadricolor*. 2. Flowering plants.—*Rhododendron Countess of Haddington*, *R. Dalhousiana*, *R. Princess Royal*, *Lucania grattissima*, *Abutilon vellicerium* *marginatum*, *Habrothamnus elegans*, *Cianthus puniceus*, *Camelia* *alba* var.—*White*, *Alba*, *Pleura*, *Dominica*, *Fumibrista*, *imbriata*, *Mathotiana*, and *Elzeugus*.

KEEPING LATE GRAPES (S. G.).—After the fruit is ripe the night temperature should be about 45°. It does not injure the Vines much to allow the Grapes to remain, provided they are cut before the sap rises.

CLEO ROOT (E. M. P.).—If the gas company will not let you have half a bushel of gas lime, we do not know where you can purchase it.

OCUMBERS UNHEALTHY (J. G. Bristol).—Remove the unhealthy growths, top-dress to induce surface roots, water copiously with tepid water, and raise the temperature of the house, increasing also the atmospheric moisture, and we think your plants will prosper.

CIMINO ROSES (G. I. H.).—All inquiries must be sent to the Editors. Many correspondents would be annoyed by private letters.

VINE BLEEDING (T. E. D.).—Char the bleeding surface again, and deeply; then rub-in a paste made of gesso and lime.

CLEO-ROOT (J. C. M.).—It is caused by a weevil, which deposits its eggs in the bark of the roots. If the roots are dipped into a paste of soot and water at planting time, and then sprinkled over the surface of the soil, you will find the weevil destroyed.

PROTECTING FRUIT TREES (J. Rogers).—The "best," that is the most efficient coverings, are light domes or canvas, but these must not remain over the trees, and a system of rollers becomes necessary for raising and lowering the protection according to the weather. The "cheapest," for remaining over the trees, admitting light and air, and affording protection from slight frosts, is stout rooily twine netting.

FUNGUS ON CAMELLIAS (W. B.).—There are eight signs of black fungus on the leaves set, but the incrustation is principally caused by dust and sooty particles from the atmosphere. Spruce the leaves with a strong warm solution of soft soap, and then syringe regularly once or twice a-day throughout the season of growth. The leaves do not appear to be unhealthy, but they are not so healthy as they would be, unless you take prompt and efficient measures to clean them and keep them clean.

NAMES OF FRUITS (Gregory).—Cockle Pippin.

POULTRY, BEE, AND PIGEON CHRONICLE.

LOWESTOFF POULTRY, &c., SHOW.

THE ninth Exhibition of poultry, Pigeons, and cage birds was held in the Public Hall, Lowestoff, on the 7th and 8th inst. The birds, although not numerous, were very good, more especially the Pigeon classes, scarcely a pen being without a card. The Hon. Sec. (Mr. L. Wren), as usual, was very active and obliging, and the birds were well attended to.

Dorkings headed the catalogue. A fair class. First a good pen; second almost as good. *Cochins*.—First and second Lady Gwydyr, both pens exceedingly good; third very yellow. *Brahmas* (Dark).—Lady Gwydyr again taking first and second honours, which they deserved. *Brahmas* (Light).—P. Haines, the well-known Light Brahma breeder, taking first and second. The first pen grand birds, but slightly out of condition. *Game* a poor class, very little to choose between the first, second, or third, all the winners being *Game*. *Reds*, but lacked the gipsy pen so much desired. *Spanish*.—First grand birds, the hen having an immense comb and face; second very fair birds. *Hamburghs* (Gold or Silver-pencilled).—The third (W. K. Ticker) we preferred to either the first or second, third being placed in a very dark place. *Hamburghs* (Gold-spangled).—As a class poor, but well placed. *Hamburghs* (Silver-spangled).—Combs of all the winners much too large. *Hamburghs* (Black).—A rather better class. Pen 72 too late; would have stood a good chance of winning. *Bantams* (Game) a poor class. *Bantams* (Black) good. *Bantams* (any other variety) a fair class; the winners very good *Sprights*. *Bantams* (Selling class).—Third (Black Reds) would have won in the open class. *Ducks* should have been divided into two classes at least.

Pigeons.—Carriers three classes, exceedingly good. They must have given Mr. Hutton, who judged them, much trouble in a reward of the prizes. *Barbs* good classes. *Dragons* a grand class for a local show. Pen 247 too late; would have run the winners very close. *Tumblers superior*. 296 pen first (Yardley), a good bird, but unwell; have been, to all appearances, overshadowed. *Pouters* a grand class. First and second will in all

Any other Variety.—First one of the best Blue Priests we have ever seen; second a Black Russian Trumpeter; third a Blue Fairy Swallow. Reading and its neighbourhood boast many local fauciers, and the classes for them were well filled.

Captain Norman Hill judged the Pouter classes; Mr. W. B. Tegetmeier the Dragoons, Antwerps, and Variety classes; Mr. F. Esquilant the rest.

We must not pass over the *Cage Bird Show*, which was lovely. Every variety of Canary was well represented, and we were glad to see well-filled classes of British birds. Twenty-four Bullfinches, sixteen Goldfinches, twelve Linnets, besides Blackbirds, Thrushes, Blackcaps, and a most tuneful Dove which cooed incessantly. The classes for foreign birds were some of the best we have ever seen. Mrs. Monk showed a most varied collection of Parrots, her aviaries almost rival her kennels. Cardinals and Virginian Nightingales seen this year in peculiarly good condition. We thought Mrs. Monk's Mule resplendent, one of the most glorious birds we have ever seen. It rightly divided first honours with Mr. Williams's "Green-Leeks," a charming variety of Parquets. The Corn Exchange was well hested, and we thought the Show generally a decided success. Mr. Blakston judged the cage birds.

SPRING DUTIES.

DURING the winter months many bees die by reason of age, and lie on the boards of the hives till they are removed by the surviving bees in fine weather, or till they are swept off by the hand of the bee-master. In cold weather and long storms, when bees cannot leave their hives, their droppings accumulate on the boards too. In early spring it is desirable to scrape all offensive matter off the boards, so that the bees may commence operations for the season in clean sweet houses. On the first day of this month all our hives were turned up and examined, and their boards cleaned. Owing to the bees being able to leave their hives during the mild winter, comparatively few dead bees were found, and a little dirt.

Mild winters are evidently more conducive or less hurtful to the health of the inhabitants of hives than cold frosty weather. Of course, in open favourable winters bees eat a little more food than they do in cold ones, but this fact is so well known that practical bee-keepers consider and provide for a little difference of consumption. It is always well to be on the safe side, and see that none of our industrious favourites perish for lack of food.

As the weather is mild, and indicating an early spring, bee-keepers in the south may now begin to stimulate their bees by slow and gentle feeding. One halfpennyworth of sugar melted in boiling water given to a hive three or four times a week will speedily cause the bees to commence breeding. This artificial feeding should be continued till outdoor work commences. This gentle continuous spring-feeding is helpful, as it promotes either early swarming or early springing. In my own apiary I shall not begin feeding for some time for this reason, that many of my stocks were created in October and November of last year by syrup-feeding. They have no bees bred in them. I do not wish them to begin breeding till the bees are able to find pollen on the flowers of this spring. The bees which I fed into stocks were obtained very late last autumn, about six weeks later than the usual time. Stocks created in September by artificial feeding are generally very strong, and equal to all the wants of nursing and working.

As soon as breeding commences hives should be kept as warm as possible. In my case it is easier to preach than to practise on this point, for I have so many to cover that I can never get materials enough to keep them all warm. Old sacks and matting, or carpets, blankets, and old garments are gathered up for this purpose, and used as the under flannels of our bee hives. All hives should be well covered and kept warm in the months of February, March, and April.—A. PERTICREW.

DEATH OF STOCK OF BEES,

"A BEE-KEEPER" says, "One of my stocks was very strong last summer, but would not swarm. The bees hung out in large numbers night and day, and stopped up the door of the hive, preventing air from getting in, and thereby suffocating as many as would have made a good swarm. After the dead bees were removed, the living bees found sufficient room inside. In the autumn I fed them with as much sugar as they would take. A few days ago I found that all the bees had died; the hive and board together weighing 25 lbs.—weight of hive and board without the combs 12 lbs., honey and combs 14 lbs. Can any of your correspondents inform me as to the cause of the bees dying with so much honey in the hive?"

It is impossible to say with certainty what caused the loss of this stock. The suffocation of the bees in the summer resulted from instantation on the part of the bee-master, as bees never voluntarily suffocate their associates or endanger the lives of their fellow workers by preventing air from entering the hives. The clusters which are formed over the doors of hives are sometimes drowned or chilled by rain and fall down, and thus close

the doors and choke the bees inside. Suffocation is produced by dead and dying; not by living active bees. Clusters of bees hanging about the doors of hives should be securely protected from rain. Ultimately your hive perished from want of bees; in other words, from not breeding young bees enough in the autumn. But nobody, in the absence of sight or an examination, can say why bees enough were not bred in the autumn. The queen may have been suffocated, or the centre combs may have been filled with foul brood, or too well filled with honey and syrup.—A. P.

OUR LETTER BOX.

HAMBURGHS AT WOLVERHAMPTON.—Your reporter, in his criticisms on Wolverhampton Show, says, "The first prize pen of Gold-pencilled contained an old cock, which was rammed in the same position at Birmingham." He is in error, as my old cock was not shown at Birmingham, and is the one we won very many first prizes with in 1875, and was not in feather for the large shows. Please correct this in your next issue, and oblige—G. J. DECKWORTH.

FEATHER NOT DYED (R. L. G.).—We have submitted the feather to every test we know—alkali, ammonia, and acids of every sort. We can detect no traces of colouring, nor do we believe his feather has been tampered with. We cannot see what object they could have, as there is nothing in the colour contrary to a Pile. It is such an one as would be almost essential in a Worcestershire Pile.

HEN BREASTING HER EGGS (S. A. Z.).—Probably the egg-passage is inflamed. Give the hen a dessert-spoonful of castor oil, lettuce leaves, and no corn. Avoid cabbage leaves unless they are boiled.

DREBBING (R. W.).—We stated in our Journal on the 25th of January that we decline entering on the subject. We have too many letters on both sides to induce us to alter our determination.

PULLET DROPPING HER EGGS (A Constant Observer).—Give her a table-spoonful of castor oil, lead on barley meal wash, and give her lettuce leaves daily.

RATS IN POULTRY HOUSE (R. W.).—We have tried most things, but have found nothing so efficacious as having numbers of cats in the places where the chickens are kept. We have no difficulty in accomplishing it if we bring up the kittens among the poultry and feed them. The rats will not come where the cats are, and the cats will not eat the chickens unless driven to it by hunger. Our chickens are at present under cover. We shall soon put them out, then we move the cats into the field with them, supply them with small butches, and tie them by means of a long string. We lose no chickens by rats. We generally ferret the haunts of the rats about once in a month. We have some good dogs, and we kill many rats. They must not be allowed to "rest and be thankful." If they are continually disturbed they will at last shift their quarters. The best traps we know are Braileford's, and the most destructive engine is the gin. It can be covered with paper, lines, or sawdust, if put in a run; if exposed it must be baited. We know no bait better than red herrings.

FANBERS (W. C.).—We know of no book upon their management.

METEOROLOGICAL OBSERVATIONS.

GAMBLES SQUARE, LONDON.

Lat. 51° 32' 44" N.; Long. 0° 8' 0" W. Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				RAIN.	
	Barom.	Hygrom.	Dir.	Temp. of Wind.	Shade Temp.	Radiation Temperature.	In sun.	In grass.		
1877.										
Febr. 13.	30.125	53.3	51.0	N.W.	44.0	55.5	48.3	53.6	44.9	0.19
Th. 7.	30.133	44.8	43.9	N.W.	43.0	52.0	48.3	51.5	40.8	—
Fr. 9.	30.077	43.3	41.7	W.	44.3	53.5	37.0	55.9	38.8	—
Sat. 10.	29.878	51.6	48.6	W.	44.1	53.3	43.0	59.0	47.7	0.070
Sun. 11.	29.850	51.0	49.0	S.W.	45.0	54.5	38.0	52.0	46.0	0.158
Mo. 12.	29.812	47.0	45.3	W.	45.0	54.6	44.4	58.4	47.1	0.154
Tu. 13.	29.759	47.0	46.0	W.	44.5	54.5	45.1	57.0	41.3	0.339
Means.	29.913	48.8	46.8		44.2	53.9	42.7	55.4	41.3	0.728

REMARKS.

- 7th.—Very fine all the forenoon; dull in afternoon, and rain in the evening.
- 8th.—Fine morning; a beautiful day, bright and warm.
- 9th.—Rather cold and less bright than the previous day, but still a fine day.
- 10th.—Fine morning; very slight shower at noon, but soon over; wind rather high at night.
- 11th.—Rain 6 to 8 A.M., fine at 9, and followed by a brilliant day; less and still more brilliant starlight night; afternoon bright at midnight.
- 12th.—Very rainy in forenoon; afternoon bright and fine.
- 13th.—Fine morning, rain at 10 A.M. and at times all day; very dark about 4 P.M.

Mild week, damp air and westerly wind.—G. J. SKIMSON.

COVENT GARDEN MARKET.—FEBRUARY 14.

All classes of goods are now getting into a small compass, and with business better, prices have somewhat improved. All kinds of early forced vegetables can now be had, and are commanding fair prices.

FRUIT.

	s.	d.	q.		s.	d.	q.
Apples.....	1	0	0	Nectarines.....	1	0	0
Apricots.....	1	0	0	Oranges.....	1	0	0
Chestnuts.....	1	0	0	Peaches.....	1	0	0
Currants.....	1	0	0	Pears, kitchen.....	1	0	0
Figs.....	1	0	0	Quinces.....	1	0	0
Figs.....	1	0	0	Pine Apples.....	1	0	0
Filberts.....	1	0	0	Pines.....	1	0	0
Grapes.....	1	0	0	Plums.....	1	0	0
Gooseberries.....	1	0	0	Raspberries.....	1	0	0
Green Peaches.....	1	0	0	Strawberries.....	1	0	0
Lemons.....	1	0	0	Walnuts.....	1	0	0
Melons.....	1	0	0	ditto.....	1	0	0

WEEKLY CALENDAR.

FEBRUARY 22—28, 1877.

Day of Month	Day of Week	Particulars	Average Temperature near London.			Sun Rise.		Sun Sets.		Moon Rise.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.					
23	TH	Royal Society at 8.30 P.M.	46.5	31.7	39.1	7 2	5 28	10 19	3 30	0	18	42	53			
24	F	Royal Institution at 8 P.M.	47.1	31.3	39.3	7 0	5 28	11 23	4 59	10	18	54	51			
25	S	Royal Botanic Society at 8.45 P.M.	46.7	32.5	39.6	6 58	5 29	10 47	5 29	11	18	25	55			
26	SCN	3 SUNDAY IN LENT.	47.3	32.4	39.8	6 55	5 31	2 19	6 8	12	13	15	56			
27	M	Royal Geographical Society at 8.30 P.M.	47.0	33.2	40.1	6 53	5 33	3 55	6 27	13	13	5	57			
28	TU	Royal Medical and Chirurgical Society at 8.30 P.M.	47.7	33.4	40.5	6 51	5 35	5 28	6 45	14	11	64	58			
29	W	Society of Arts at 8 P.M.	49.0	35.0	41.0	6 49	5 36	6 57	6 59	15	12	42	59			

From observations taken near London during forty-three years, the average day temperature of the week is 47.3°; and its night temperature 33.2°.

THE AURICULA.



HIS pretty spring flower is now beginning to make rapid growth, and many of the earliest trusses are considerably advanced; they are beginning to repay the ardent cultivator for many months of attention.

The plants now require more care—shelter from biting winds and sharp frosts at night—than they do at any other season of the year. It will be well to double-mat the frames if the thermometer is likely to register 8° or 10° of frost. All the plants ought to be surface-dressed before the second week in February; this of course depends to a certain extent on the weather. I have known a severe frost set in about Christmas and continue until February. The soil in the pots would in that case be frozen hard and could not be touched until mild weather. After the surface-dressing is applied, which ought to be of moderately rich material—about two-thirds loam to one-third decayed manure and a little sand and leaf soil—the plants ought not to suffer for want of water at the roots, and it ought only to be applied to the roots; the fine mealy-foliaged sorts are utterly spoiled when the leaves are drenched with raindrops or water from the pots. At present the foliage of Topsy, Trail's Beauty, Taylor's Glory, Smith's Ann Smith, and many others, as it is increasing in growth is extremely beautiful and ought to be as carefully preserved as the pasts in the centre of the flowers or the white-powdered edge. We often hear of the fine flowers that used to be grown half a century ago, but when one reads of the treatment (and I do not now allude to the over-rich composts, but to the way the plants were exposed to the weather in early spring) it almost makes one shudder. After the blooming period is over a shower is not of so much matter; but one of the principal growers, Mr. Hogg of Paddington, who took lessons from Emmerton, Kenny, and other growers, says in his treatise in reference to the treatment in March—"Let the lights be off all day if the weather is in any degree favourable, and let the plants receive all the soft and gentle rains that fall until the pips open. Protect them, however, from cold elets and snow and cold cutting winds." In February he says, "If any of the plants require shifting into larger pots now is the time to do it," and, again, they are to have plenty of rain—"at least rain sufficient to reach the roots at the bottom of the pots, and this may be repeated when necessary through the month." What grower north or south would treat their plants in that way?

Auricula shows were very frequent at that time, and fanciers would go to much trouble and expense to win the blue ribbon, a silver cup. Hogg gives an amusing account of the trials of a gentleman holding some office in the India House whom Emmerton had imbedded with the Auricula fancy, and who under his directions was confident of winning the silver cup. He purchased about one hundred plants of the best sorts; but Emmerton contended that without bullocks' blood and goose dung

they would stand no chance. He persuaded his pupil to commission some country waggoner out of Sussex to bring him at midsummer two geese and a gander, which, according to Emmerton's calculation, would produce dung enough by Christmas to last him two years, when they would be fat and fit to kill, and well adapted for good fare wherewith to treat his friends at that joyous season. This project was soon put in execution. The geese were brought to town and cooped up in a corner of his small garden, which might be 10 yards long by 5 wide. Everything was going smoothly; the plants grew and the dung accumulated; only the man's wife complained of the filthy smell arising from the heated and fermenting dung, but Emmerton promised soon to remedy that evil by covering it with loam. Notwithstanding, as the dung increased and was stirred up with the blood, the stench increased too, and became so intolerable that the women living at the two adjoining houses joined their complaints with hers, and abused him whenever he made his appearance. Emmerton finding the storm gathering in earnest judged it prudent to decamp, telling them that the London ladies were too fine-nosed by half; but he never dared to repeat his visits afterwards. This was only a prelude to the vexation which the gentleman had to experience himself. "One day when absent at his office the door of the coop was left open, and the geese finding themselves at liberty waddled about the garden unnoticed; and having been deprived of grass and green food so long, fell upon the Auriculas in the frame, pecked, bit, and pulled them out of the pots, trod over and spoiled them so completely" that they were of little use afterwards. Emmerton seems to have been unfortunate, not only in business, but in other respects; he libelled the parson of his parish, a magistrate withal, by hanging him in effigy on a tree amongst his Auriculas, for which offence he was indicted, and suffered a year's imprisonment in the King's Bench.

The Auricula-growers now make no secret of their composts. I have already told all I know about them in these pages; and about two years ago three of the best articles I have ever read were published in this Journal from the pen of the Rev. F. D. Horner of Kirkby Malzeard, Ripon. The lists of varieties need not be altered yet, and the cultural directions are complete.

We are all looking forward to the great show to be held at the Crystal Palace April 24th. It promises to be such a show for magnitude as has not been held in England before (of the Auricula, of course). There will be very little restriction in the schedule; it has been framed to admit of as many competitors as possible. And in this respect it rather differs from that of the National Society at Manchester. In that schedule the "pans" of six must have all the classes represented—that is, green, grey, white, and self edged; and in a class for twelve pots they would suggest that there should be at least two plants from each class. When a grower has a large collection to select from he can easily do this, but a small grower might not possess the stipulated number of the different classes, and yet might be able to arrange an effective

group; and this could be done if one of the classes was to be quite left out of it. Of course such a one could not stand before an exhibitor who had all the classes represented and of equal quality. Variety in classes must with a competent judge stand for something. A case in point occurred at one of the provincial shows of the Royal Horticultural Society. A set of prizes were offered for "the best six Pine Apples." One exhibitor had staged a collection in, I think, three varieties, when a friend of mine said, "I intend to put up six, but they are all Queens. How will I stand against that collection?" I said it was very likely that the judges would give a little in favour of variety—perhaps a point or so. "Well, then," he says, "I will not stage mine. I think they ought to stand upon their merits alone." He did peek them up, and was about sending them back to the station. However, I urged him to bring them out of the box, and my friend was easily first with his Queens; their quality quite overbalanced the variety of his opponent. Had the fruit been about equal in quality the tables might have been turned.

Placing sticks to the trusses of Auriculas is a sore trial to northern tastes. Down south we do it without the least compunction; we fancy it is an improvement. The northerners say the Auricula needs no support. There are a few other immaterial points, but it is most likely that we shall learn from each other, and who knows but the rules and regulations will be the same next year?

Next to the show or stage Auriculas come the Alpines, and here again north and south are at issue. It seems there are shaded and self Alpines. In the north only the shaded flowers are admitted in competition. Were some of the fine varieties raised by Mr. C. Turner of Slough, admired by all the frequenters of our exhibitions, and certificated by the Floral Committee of the Royal Horticultural Society, exhibited for competition at Manchester they would be disqualified—that is, if they had the edge one decided colour—unshaded. A true self—that is, a flower with white paste, must be unshaded; it must be self-edged. The true Alpine has a yellow centre, and it must be unshaded. I would just like to put this question to our northern friends, What right have you to make this distinction? One of our best florists writing the other day in a contemporary says, "Seedling-raising is an admirable school for teaching humility and opening the mind and heart to the limitless power of the Infinite." Why then should we limit that power? I cannot yet see why we should let one class of flowers quite override another and equally beautiful one. Perhaps some of our friends will kindly explain it to us.

Then we have the Polyanthus. Mr. Dean of Ealing has taken in hand the border flowers and improved them by selection. They are well adapted for decorative purposes, and they have been admitted at our southern exhibitions; why should they be excluded because they do not conform to certain rules laid down by florists half a century ago? The question for the judges would be first, Are they Polyanthuses? The next the quality of the flowers and their general effectiveness. If the old-fashioned flowers, such as Pearson's Alexander, Buck's George IV., Nicholson's Bang Europe, or Ekersley's Jolly Dragoon are superior to the improved border flowers let the judges decide.

I do hope that collections of the best Alpine Auriculas and Polyanthus will be sent from the north, and that we shall be able to have a friendly discussion about them. In making the above remarks I trust it will be understood that I write in no captious spirit, nor have I been prompted by any member of the southern committee. I am entirely responsible.—J. DETOLAS.

MUSHROOM GROWING.

This subject, although often written about, is by no means "threadbare" so far as regards every reader being able to put the printed instructions into successful practice. I have not always grown Mushrooms. I can remember the time when I knew nothing whatever about the subject further than what I read in the Journal and elsewhere, and then I often thought how difficult it must be to grow Mushrooms, and hoped I should never have occasion to do so, as, although moderately informed, I should be sure "to make a mess of it." Now I find growing Mushrooms to be one of the most simple affairs I am called on to perform, and I cannot see why it should not be the same to others.

All our beds this winter have done extraordinarily well so far. The Mushrooms have averaged in size from the tender

little "button" to the full form of a common tea-saucer. These latter when quickly grown are favourites with the cook, and so are the buttons, which is the name given to the Mushrooms when they are about the size of a coat button; but I do not approve of cutting them so small, because if they are only left for two days longer they will be three times as large and quite as good to eat; but although I recommend their being allowed to develop, I have cut a good many lately in a small state simply for the reason that they came up so thick in the bed that they had to be thinned-out to give the remainder room to spread. Some may say the spawn must have been excellent to produce such results; but I do not think it was anything extra, neither was the treatment to which the beds were subjected, everything having been done in a simple manner, as will be seen from the following brief description of my practice.

A barrowload of fresh horse droppings is brought from the stable every day. We make a bed out of about eighteen barrowloads; consequently it takes about three weeks to get sufficient together to form a bed. The whole of the manure is placed in an open shed. As each barrowload is added it is mixed with that previously laid down. It is thrown down loosely and spread out thinly, and during all the time it is drying it is never allowed to heat excessively or ferment. When the desired quantity is collected together it is cleared away to make room for a fresh lot. Before taking it into the Mushroom house it is turned over twice, and previous to doing this two or three barrowloads of open soil are thrown over the heap and the whole mixed up together.

In making the bed a beginning is made by placing a layer 2 or 3 inches thick all over the bottom, beating it firmly, then adding layer after layer until the whole of the material has been used. For a day or two after this has been finished nothing is done to it, and by that time the heat is becoming strong. The bed is spawned at this time by breaking the bricks into bits about the size of a walnut and putting these all over the surface, but 2 inches below it, and about the same distance apart. A cabbage dibble is used for making the holes, and they are left open for a night and are then closed over the spawn. The surface is beaten firmly and smoothly, and then open soil to the depth of 2 inches is spread all over it; this is also beaten firmly, and afterwards watered and smoothed with the back of a spade. This completes the whole operation. We begin cutting the Mushrooms from four to five weeks after spawning.

I think our practice differs in several points from that I have seen recommended. It is generally advised to let the heat rise in the bed and again decline before putting in the spawn. I question if this is always the correct thing to do. I have never tried and therefore cannot say what amount of heat will destroy the spawn, but I am inclined to infer from what I have observed that when the heat is allowed to decline it often does so to the extent that it has no power to move the spawn, consequently it remains dormant, and the bed is a failure. I find the best way to keep up a constant supply of Mushrooms is to make the beds small and often; ours are generally about 8 feet long and 4 feet wide. The house is always kept dark, and the temperature from 50° to 55°; a higher temperature has no advantage. We never syringe, but only damp the floor three times a day. Some beds are never watered from the first, but any that may become dry on the surface are given a slight sprinkling. In gathering we twist the isolated Mushrooms out by the roots, but those growing in clusters are cut, as drawing them often injures the others.—A KITCHEN GARDENER.

AURICULAS ATTACKED BY WOOLLY APHIS.

In answer to your correspondent John T. D. Llewellyn, page 96, respecting the use of Gishurst compound to his Auriculas attacked by woolly aphis, I beg to inform him that he may use it with perfect safety, although Mr. Horner, in his very great dread of using anything to our pets the composition of which he is not acquainted with, advises him not to do so. I had the misfortune to have my plants infested with the enemy last autumn, and as I report early (beginning of June) my plants had become well established when I first detected the aphis, and I was therefore very loth to disturb the plants; but knowing the danger to which I was exposed I resolutely made up my mind that however serious it might be to disturb them at that season, it could not be so bad as to allow the spread of the blight, and I therefore at once turned the affected plants out of the soil and washed them, root, stem, and leaf, in a

solution of Gishurst compound of the usual strength, and with, I am happy to say, the best result, for none of those so treated show any sign of the blight, nor are they now any worse for the remedy.

I am afraid this pest is likely to be a source of annoyance to Auricula growers, as I hear of it in more than one collection, and I know of one grower who, having just detected it, is treating his plants with Gishurst. I have also heard of it among Camellias and Vines. Have any other of your readers?—W.F.S., York.

ROYAL HORTICULTURAL SOCIETY.

MANY letters have been written and suggestions made for the better government of this Society. Some of the letters have been temperate, others intemperate. Some writers have arrived at "lame and impotent conclusions," and others have advocated a destructive policy. In fact it is only by a stretch of charity that we can believe that all who have endeavoured to "assist" it are really desirous of seeing the "old Society" prosper. Some of the letters, if one is to be curious enough to read between the lines, almost reveal a fear lest after all the patient should recover; but these are only a few and are not worthy of discussion, the majority having evidently been prompted by good intentions.

Probably no one has worked harder and with a better motive than Mr. G. F. Wilson, but, so far at least, the results have been "impotent" indeed and extremely disappointing. Who are there in the horticultural world who have read the many "encouraging" letters which have appeared in the press, who were not struck with amazement on reading the speech of Mr. H. J. Veitch as delivered at the meeting of the 13th inst.?

More than half of the horticultural world had begun, as it were, to acquiesce in the destructive policy on the faith of the tacit understanding that four thousand or five thousand "world-be guinea Fellows" were ready to hoist "the flag of freedom" and march in dignity to the goal of glory; but when these four thousand or five thousand dwindle down, as Mr. Veitch showed, to 273, and one-third of them are already Fellows of the Society, "what a miserable falling-off is here." I regret this exceedingly, for the best of all reasons—that I was a believer in the guinea scheme. I do not hesitate to say that I am deceived and almost humiliated. Mr. Veitch has brought me from the clouds to my humble level on mother earth, and I will not again listen to exclamations about "dignity" until I know that there is meaning and money attached to it.

I have again read Mr. Wilson's appeal and still think it good in principle; but after the tone of the meeting on Tuesday last, and the apparent utter inadequacy of the expected guinea response, I think the appeal would be greatly improved by taking out of it one sentence in parenthesis, yet very important—namely, "that the guinea fellowships do not come into force until the Society is free from Kensington." After having considered the matter in conjunction with the various statements and expressions of opinion which have come before the public, I think the removal of that condition would enable Mr. Wilson to do more substantial good to the Society which he desires to see prosperous than he can possibly do by its retention. Mr. Wilson has more than once expressed his confidence in the present Council, and has discontinued by anticipation any change; he knows also that it is impossible for them (however strong their desire might be to do so) to leave Kensington for a considerable time. It avours, therefore, somewhat of a dog-in-the-manger policy to be able to render aid and yet withhold it, at the same time that such aid cannot be effectively applied in another manner. That the Council also enjoys the confidence of the horticulturists is abundantly evident, or they (the Council) would not have the liberal and gratuitous support which has been so spontaneously rendered by all the leading metropolitan nurserymen. The Council are evidently a body of trusted officials ready and anxious to promote the interests of horticulture to the utmost of their power. Then why restrict any source of aid? Let the guineas come in as fast as they will from the country horticulturists; and as the Council have clearly expressed that "the manner in which the Kensington gardens are kept depends on the subscriptions of the Kensingtonians," there is no fear that the country guineas will be spent in mere town parade.

The Council, too, it appears, are willing to accept guinea Fellows, admitting each to the full privileges of the Society except voting, and some, in fact, I think have already joined.

I fully expected that some opposition would have been expressed at the meeting on the voting question as restricted by the Council, but so far as I can learn not one voice was heard against the Council's decision, although the meeting was largely composed of horticulturists, and included the editors of the gardening journals, and even also Mr. G. F. Wilson. Not one word in opposition to the official views was heard, but there was a really unanimous approval—the approval of silence. And after all what does the voting of guinea subscribers amount to? A long journey to vote on a matter which not one in ten would care to vote about, or at least would not incur the expense of the "privilege." I am sure I should not, and I am as willing to pay my guinea as a countryman without having a vote as in possessing that which I should not incur the trouble or expense of exercising.

So long as there is a distinction in Fellows' contributions so long must there be a distinction of privileges. It is so in all societies, and if the privileges are to be equal so also must be the contributions. If guinea Fellows, or whatever they are called, have a right to every privilege of the Society, everyone must command the right of being a guinea Fellow.

The Council are engaged in an onerous and thankless task; and what is their object? The establishing of the Society and the advancement of horticulture. What is their reward? The hoped-for aid of all who are as anxious as they are. Country guineas alone cannot save the Society. Country people have local societies to support, and only a small proportion will render aid to a national society also; but why should they be unable to do so on account of arbitrary restrictions? As an earnest of the Council to extend the influence of the Society, their last effort to incorporate local societies, giving them privileges and granting them medals, &c., affords ample proof. I ask that the unmerited distrust may cease, and that aid from all sources—local and general—be permitted to come in, for according to those who are best able to judge it is only by such united aid that the Royal Horticultural Society can flourish.

—A GUINEA MAN.

THE following letter has been sent to the *Pall Mall Gazette* by Sir Charles W. Strickland, Bart. :—

"Sir,—I am sorry to see that such a paper as the *Pall Mall Gazette* should advocate the breaking up of the Royal Horticultural Society, because it has unfortunately made the blunder of becoming a partner with the Commissioners in the making and management of the gardens at South Kensington. In the article in your number for last Thursday it seems to be assumed that the Society exists wholly, or at least chiefly, for the maintenance of this miserable tea garden. The writer of that article appears to be wholly unaware that the Society still does a good deal of valuable work in its proper sphere—that is, in the promotion of horticulture, and that if it could get rid of South Kensington, or could entirely separate the South Kensington account and its management from that of the Horticultural Society proper, it soon would do much more of its own work, and that it is for the sake of this work that I and many more of the older members of the Society continue to belong to it. I have invested four guineas a year for many years in the Society, and consider that I have a vested interest in it, and that it would be an act of injustice and robbery to break up the Society. And let no one delude themselves with the idea that they could set up a new Horticultural Society in the place of the old one. If I were to see all that I have spent upon the Horticultural Society thrown away, do you suppose that I should be such a fool as to begin over again and invest in a new Society? and I have no doubt that a large part of the members of the Society would feel and act as I should do."

CELERY CULTURE.

VERY soon preparations must be made for a supply of Celery for next autumn and winter. Celery is seldom wanted before October or November, and the beginning of March is a very good time for sowing the seed. If wanted earlier than the period named, of course the seed must be sown earlier; but it should be remembered that the plant is really a biennial, and would under natural conditions flower the second year, but under a course of artificial treatment it is started into growth much earlier than would be the case in nature, and when this happens it has a tendency, like many other biennials, to flower the same season.

The seed should be sown thinly in pans or boxes and placed in gentle heat, and as soon as the plants appear they should

be removed to a cold frame, giving plenty of air on all favourable occasions till the end of April, when the pans or boxes may be placed outside, so that the plants may be ready for pricking-out about the middle of May. The cones usually adopted is to prepare a bed and plant the small seedlings out about 4 or 5 inches apart, to be again transplanted into the trenches; but if the ground is vacant I recommend that the trenches be prepared and the seedlings be put out about a foot apart in them at once, taking great care in handling them; and if watered with a fine rose till the plants make a start they receive no check, as they must do when transplanted in the hot weather later on, for it is important that from the time they are first planted to keep them always in a free growing state. I have followed this course with good results, and the loss of plants in the rows was only two per cent.

The trenches should be made in an open position in the garden, digging them 9 inches deep, and placing in them about 4 inches of rich manure, and the nearer they are to the pump or tap the better, for without plenty of water throughout the season good Celery cannot be grown. When earthing-up is commenced, which should not be until the plants have attained a good size, the rows should be gone over to remove any side shoots, and a thorough soaking of water should be given the night before the earth is applied, being careful that the plants are quite dry before any soil is placed round them. The practice of pushing the soil against the plants in the form of a sharp ridge is bad, as it is liable to throw off all the water from the roots, and at that period of growth they still require a good supply, but at the final earthing it will be necessary to have the ridge-like form for throwing-off the rains during the winter.

Sandringham Dwarf White and Incomparable Dwarf White are two good white kinds, or perhaps they are synonymous. [Yes.] Manchester Red and Leicester Red are good red kinds, but if I were only to plant one sort it would be Leicester Red, for it is of good quality and flavour, and keeps sound in light soil till March.—A. H.

[We have seen the Celery grown by our correspondent both as exhibited at South Kensington and as growing in the garden under his charge, and we never observed better produce. We noticed that was the best which had been transferred direct from the seed-pans to the trenches without any intermediate transplanting.—Ems.]

EXHIBITION PANSIES.—No. 2.

WHEN advocating the claims of fancy Pansies I meant to do show varieties no injustice; I merely laboured for the recognition that is being tardily accorded the former. Some of the fancies which have been sent out are, I confess, sufficiently bad to dignify any true florist, and could only serve the purpose of deepening the pre-judice against the species. The bad varieties have been chiefly remarkable for size, and but for this characteristic would have left the seedling bed for the rubbish heap; but size without the other elements of a good flower is worth nothing, and the destination of such an one ought to be the spot indicated. One of this class, called H. W. Tugwell, Esq., was sent out in 1875 by a noted Fancy grower of Bath, and proved the most disappointing flower it has ever been my misfortune to purchase. When it bloomed I could not believe it was true to name, so different was it from the raiser's description, and I sent direct for another plant; but it was true, and at the same time very false, for instead of being of "large fine form, edged with rose, circlets of white, and blotch of lavender," it was the veriest mongrel ever sent out and unworthy of existence.

While, however, good fancies may be raised in comparative profusion, equally good show flowers are few and far between. Last year several were sent out, reaching the very highest standard of form, colour, and substance, and so good that it is difficult to believe they will ever have to give way for others.

Dean Ramey, sent out by Messrs. Dicksons & Co. of Edinburgh, is an exceedingly rich velvety crimson self, of exquisite form and ample substance, and one upon which an exhibitor may always depend, being constant, vigorous, and a free bloomer. Zama, raised by Messrs. Downie & Laird of Edinburgh, is a perfect yellow self, as round as a coin, and so smooth as to require no manipulation to make it lie down in the pan; it would, nevertheless, be better if it was a trifle bigger, but I hope next year to find it improved in this respect. Flag of Truce, by the same raiser, is of the purest white, and equal to Zama for form and quality. As far as I have seen

The Sultan (Dicksons) is the best new yellow ground, having a beautiful golden field, maroon belt, dense blotch, and is smooth, constant, and large. Close up is John Paton (Downie) with its bright purplish belt and very fine form, followed closely by William Martin (Dicksons), a primrose ground, rich chocolate belt, solid blotch, and a smoothness equal to Zama. A really good white ground, like a perfect self, is a *rara avis* in Pansy-raising, and when Messrs. Dicksons first saw Beatrice the thrill of pleasure must have been intense. Their own description of the flower is as follows:—"Clear white ground, very dark heavy purple belt, fine solid blotch, and neat eye; very large, of great substance, and always fit for exhibition;" and I can safely say there is not the least exaggeration. Unlike many white grounds it is a good grower, and unless shows occur especially fast, with care a good bloom may always be obtained. Messrs. Downie & Laird's Duchesse, too, is a grand flower, as is also Miss Todd. Of other new show varieties I may name Mrs. Henderson, P. W. Sime, William Forbes, and Demetrius (Cocker), but the list is necessarily short, as I only speak of those I have proved. The Queen, sent out by H. Hooper of Bath, I have kept purposely to the last, not because it is the best, but because it is the largest. As its raiser claims, it is "the largest white ground ever raised," but it has not done well with me; it has come so rough and uneven, and often ragged in the belting, but it has many of the properties of a good flower, and I shall try it this year under two or three varieties of condition.

Taken as a whole, the show flowers of 1876 are a good lot, and many of them are a vast improvement upon varieties previously in cultivation; still there seems to be too strong a desire to send out a long list of new sorts, and only under very exceptional circumstances can this be done without sacrificing quality to quantity. For myself I would rather send out one really good flower in five years than annually put upon the market a dozen or two of mediocre merit to the injury of my own reputation and the discouragement of those desirous of keeping pace with the times. I have suffered so much from the result of blind faith in raisers' descriptions that I have often half resolved to buy nothing which I have not seen in bloom; but as I cannot journey every year to Edinburgh, Aberdeen, and Bath, I am forced to select a few from each raiser, and give him the best order the following year whose descriptions are nearest the truth.

Next week I will give a brief list of older show flowers of merit and a few remarks upon cultivating and exhibiting.—M. H. MILLER, Leek.

NOVELTIES IN THE ROYAL GARDENS, KEW.

THIS RETICULATA is the finest of the herbaceous plants in flower at Kew. Its purple flowers relieved with orange form a dense mass which the slender leaves do not hide, but shooting above add greatly to the effect. *I. stytiosa* is also very fine, though the flowers are somewhat obscured by the stronger leaves. These beautiful plants, especially the former, cannot be too strongly recommended for the most liberal planting.

Many beautiful Orchids are flowering. The *Dendrobium* are represented by several fine species. A good specimen of *D. crassinode* has several stems thickly laden with rosy-tipped flowers. Of *D. Wardianum* there are light and dark varieties. *D. primulinum* is attractive and distinct in appearance, so also is *D. heterocarpum*. *D. Hillii*, of which there are several plants, is certainly one of the most effective. *D. speciosum*, to which the last may be referred as a variety, is also in bloom. *D. moniliforme*, *D. noble*, and the variety *pendulum* add much to the display, besides which there are several of less ornamental character. *Stenorrhynchis speciosa* is a rather rare terrestrial Orchid, easily cultivated and of much merit. It has crimson flowers, and conspicuous bracts which show the same colour almost from the first appearance of the scape. There is a variety with spotted leaves, and both are ornamental when out of flower. *Oncidium cheiroporum* is an extremely pretty species, of which a figure is given in the "Botanical Magazine" of this month. It has a neat small habit of growth, and the diminutive flowers are very numerous. They are bright yellow and sweetly scented. Other species are *O. aurum*, *O. reflexum*, and *O. flexuosum*. *Odontoglossum* are now in variety. These are *O. cordatum*, *O. gloriosum*, *O. nebulosum*, *O. triumphans*, *O. pulchellum*, *O. Rosellii*, *O. Rosellii superbum*, and *O. Lindleyanum*. In company on the same shelf are *Lycaste Skimneri*, *L. linguella*, and *Ada surattiana*. Among the *Cypripedium* are *C. venustum*, *C. biflorum*, *C. R. cal.*

C. pardinum, *C. Harrisianum*, and *C. javanicum*. Besides *Angreum sesquipedale* are *A. obnumm* and the variety *virous*, both of which are highly ornamental though less choice. In baskets near the *Dandrobiums* in the warm division are *Phalenopsis rosea*, *P. grandiflora*, *Saccolabium guttatum*, and *S. Harrisianum*, which often attracts attention from its agreeable perfume. *Epidendrum xanthinum* is a fine ornamental species, with dense heads of yellow flowers. The same may be said of *E. erectum*, with purple flowers. *E. fragrans*, though not showy, is of pleasing appearance and delightfully fragrant, on which account alone it is worth cultivating. *E. cochlearium* is of similar habit, and peculiar from its nearly black shell-shaped lip and narrow sepals and petals. *Laelia superbiens* has some beautiful heads of bloom, with which also is *L. anceps*. Of *Cattleya Trianae* there are fine light and dark varieties.

THE LILY.

In my communication of the 1st inst., when alluding to a show of flowers which had been made, as it was stated, by a bulb that had flowered the previous year, I said "it was the successor of the former bulb that produced the display, as a Lily bulb can only flower once—that is, during one season." Permit me now to explain.

In the first place, I ask, Is a Lily an annual or a perennial, or is it between the two, a biennial? The origin of a Lily bulb is a germ or seed bud. Nature causes this to vegetate or grow the first year, to bloom the second year, and then it dies—leaves, stem, scales, and roots all perish. Such is the short span of the existence of a Lily bulb. If a bulb that has flowered is taken up, say late in the next autumn, and cut in two vertically, it will be seen that it has within itself three distinct generations—that is, a portion of the parent bulb which has flowered this year, 1877; the whole of a new bulb which Nature destined to flower in 1878; and a germ or seed bud which was intended to grow up a full-sized bulb and flower in 1879. At this time, the autumn of 1877, the seed bud will be so minute as not to be perceptible without the aid of a magnifying glass, but if a similar bulb is taken up in January, 1878, and dissected the seed bud will then be perceptible to the naked eye, as it will be about the size of a snary seed, and will, if the scales are picked off carefully, be found in the axil between the inmost fleshy scale and the base of the new flower-stem. I send you a slice, marked No. 1, of a bulb I cut open last month; it is now considerably decayed by exposure, but still you will perceive the seed bud at the base between the scales and a portion of the new flower-stem. No. 2 is a portion of a bulb I took up only two days ago. It is a very fine fresh specimen, as I was careful in picking off the scales. At the base of the flower-stem which was destined to flower this year you will see the seed bud eight or ten times larger than No. 1, showing the comparative large increase in growth it has made in only one month. This seed bud was destined to become a full-grown bulb and flower in 1878.

The plan that I adopted in order to trace the progress of the seed bud as it grew up into a fully-formed bulb was this:—In October, 1873, I lifted some fifty thoroughly matured bulbs and replanted them in a piece of spare ground. In January I commenced by taking up two or three, cutting the bulbs vertically in two, and otherwise dissecting them for the purposes of my experiments. In this month I found the seed bud, as I have said, about the size of a snary seed. In this manner I continued to lift two or three bulbs every month up to the following October, in flower or not, as the case might be, and noted the progress of the seed bud until it had grown up similar in size to one I had cut and laid open for inspection in the previous autumn.

By this simple experiment it may be proved in the most satisfactory manner that the parent bulb of this year, after having flowered, and after having all the sap absorbed from its scales for the nourishment of the new bulb, decays and dies. In like manner its successor flowers the next year, decays and dies; and so on, one generation following the other year after year, and all emanation from germs or seed buds.

There are some professional Lily-growers who have very strange notions about the physiology of the bulb, who have passed round and round about it for many years, who have actually stumbled over it without apparently having perceptive powers sufficient to grasp its very simple details. Messrs. Teutschel, the extensive growers and importers of the Lily, in their observations say:—"What is the bulb but a receptacle

of stored up force during the winter months to preserve life and perpetuate spring growth?" Again:—"A yearly increment of growth occurs in healthy Lilies in the interior of the bulb, the outer and old scales are pushed further apart by the new growth, and the bulb increases in size more or less according to the nature and health of the bulb." Again:—"We have constantly observed when Lilies are taken up that there are two sets of scales, the outer irregular discoloured portion, which represents all that is left of last year's bulb, and an inner, regular, plump, white set of scales, representing the growth of the previous and the inflorescence of the coming season." Now, what possible information can passages like these convey to the mind of the inquiring amateur? They can only bewilder and discourage him. Another extract and I have done. Messrs. Teutschel say:—"A bulb will send up two or more stems. At the close of the season it will be found that each stem has acquired a separate bulb, and that two, three, or more bulbs have been formed out of the original parent."

With reference to this last extract, which very imperfectly accounts for the phenomenon, we know that almost every scale of a fresh ripe bulb could be made to germinate, but not while they are connected with a growing new bulb, as such a bulb draws all the nutriment out of the scales of the parent bulb until the parent decays and dies. There are, however, sometimes more than one seed bud which grows out of the new bulb altogether independent of the parent bulb, and this gives rise to the phenomenon of what is properly called twin-bulbs. As an illustration of the fact I send you the half of a specimen bulb which I took up last October and cut in two. It is shrivelled up by exposure to the atmosphere, but still you will see that there are two finely formed twin-bulbs, and behind, and entirely distinct from them, is the decayed stump of last year's flower-stem. These bulbs are equal in size, and show each the rudiments of a new flower-stem, and had the parent bulb been left in the ground or replanted these bulbs would doubtless have both flowered this year. Look at the remains of the parent bulb; if it had been allowed to remain in the ground these twin-bulbs would have been much larger than they are now, and the remains of the parent bulb in the ordinary course of nature would have been dead and gone by this time. Then how can it be said with truth that the bulb that has flowered this year has ever flowered before? Or with what truth can it be said that the bulb that has flowered one year will ever flower again?—DUNEDIN.

NOTES AND GLEANINGS.

At the last meeting of the Floral Committee of the ROYAL HORTICULTURAL SOCIETY a silver Davis medal was recommended to be given to W. H. Michael, Esq., not "Micholl," as published in our report. In connection with these meetings we cannot overlook the apparent anomaly, that while all the collections of the nurserymen have the exhibitors' names, &c., attached, the private collections are exhibited under numbers only. Surely if the names of half of the exhibitors may be attached to their productions those of the other half may be similarly given. Mistakes in reporting would then be less likely to occur, uniformity would be secured, the meetings would be more interesting to visitors, equally fair to exhibitors, and more generally convenient to all concerned.

—The Council of the Royal Horticultural Society have decided upon holding a PROVINCIAL SHOW this year, and as soon as the necessary preliminaries are arranged due notice will be given.

—We have received a copy of the proposed schedule of the CARNATION AND PICOTEE SHOW which is to be held in London in July next. There are ten classes, and the value of the prizes range from 70s. downwards. A list of supporters is appended, showing that upwards of £40 has been subscribed. Further aid is solicited, and we trust that it will be forthcoming, so that a substantial impetus may be given to the cultivation of these beautiful flowers.

—A CORRESPONDENT writes to us as follows regarding the FLOWERING OF THE LAURUSTINUS:—"Many have remarked on the remarkable profusion of flowers which are being produced by this shrub; but it is not remarkable that while vegetation is earlier than usual owing to the mild winter, the Laurustinus is much later in flowering than has often been the case during severe winters?" We should say it is very remarkable if it is so. What do other observers say on the subject?

— At the suggestion of Lord Alfred S. Churchill the Council of the ROYAL HORTICULTURAL SOCIETY have decided upon affiliating provincial horticultural societies upon an annual subscription of five guineas; and the privileges offered to such societies are: A member's ticket to the Secretary, and twelve single tickets of admission to any meeting or show of the Society in London; also the following medals to be offered as prizes at the shows of the local society—one silver Knightian, one silver Banksian, one bronze Knightian, and one bronze Banksian, so that societies which have not medals of their own will be enabled to offer these as premier prizes.

— **STANDISH MEMORIAL FUND.**—An excellent portrait by Mr. F. Havill has been secured, and is now hung, together with those of Mr. T. Rivers, the late Mr. James Veitch, and Rev. J. Dix, in the Council-room of the Royal Horticultural Society at South Kensington. The ownership of the portrait is vested in the trustees of the Lindley Library, as per annexed letter, who also hold the other portraits, so that should circumstances necessitate it, it can at any time be claimed and removed from its present position, where it hangs by permission of the Council of the Royal Horticultural Society.

"Royal Horticultural Society, South Kensington, June 9th, 1876.

"H. J. Veitch, Esq.

"SIR,—Your application on behalf of the Lindley Library Trustees for permission to hang the Standish portrait in the Council-room of this Society, was laid before the Council at their last meeting, and I was instructed to inform you that they have much pleasure in granting your request.

"I am, Sir, your obedient servant,

"J. DOUGLAS DICK."

A suitable stone and curbing has been placed over Mr. Standish's grave in Ascot churchyard, with the following inscription—

This Stone is erected by a few Personal Friends to the memory of JOHN STANDISH, Nurseryman, Born March 29th, 1814. Died July 24th, 1875.

The Committee think it only right to annex a copy of a letter received from Mr. Gibbs, to whom the erection of the memorial was entrusted, and which speaks for itself.

Standish Memorial.

Albert Gate, Knightsbridge, September 28th, 1876.

"H. J. Veitch, Esq.

"SIR,—The above monument was fixed last week, and out of respect for the late Mr. Standish I have made it in polished granite instead of stone as originally contracted for.

"I am, Sir, yours truly,

"J. F. GIBBS."

— ONE of the most useful of Azaleas for forcing and early flowering is *A. AMENA*, and the greatest improvements on the species which we have seen were those exhibited at Regent's Park in April, 1875, by Mr. Carmichael, gardener to W. Tugwell, Esq., Crowe Court, Bath. To two varieties—William Carmichael, the result of a cross between *A. amena* and *A. Flag of Truce*, and Mrs. Carmichael, a seedling from *A. amena* and *A. Stella*—floral certificates were awarded. *A. amena* was the male parent in both instances. Mr. Carmichael's seedlings passed into the hands of Mr. B. S. Williams, who has, we observed the other day, raised a large stock which he will in due time distribute. The new varieties have the same small foliage as *A. amena* and flower similarly freely, but the flowers are half as large again and are distinct in colour. These varieties cannot fail to be valuable for affording cut flowers and for general decorative purposes.

— In reference to the report of the General Meeting of the ROYAL HORTICULTURAL SOCIETY Dr. Denny writes to us that he wished to convey to the meeting that he "did not believe, if the matter was properly put before the Finance Committee, that that body could well refuse to allow of the borrowed money being refunded out of the Society's current account." Dr. Denny further remarks "that in instituting the Society's provincial shows the Finance Committee refused to allow any of the Society's money being spent for that purpose; and that the first show was carried out through the exertions and personal guarantee of a few spirited horticulturists outside of and on the Council, but with the understanding that the profits (if any) resulting should be allowed to constitute a distinct fund for similar undertakings in future; and this arrangement was subsequently confirmed by the action of the Finance Committee. I therefore maintain that the money borrowed by the Treasurer (Mr. Dobree) from this fund is as much a debt of the Society's as that which was borrowed to meet the exigencies of the Society of Her Majesty's Commissioners, and which has been repaid."

— In the account of Wortley Hall in another column attention is directed to the fact that *ADLANTUM FARLEYENSE* as potted in loam is much more vigorous than other plants which are growing in soil containing more or less of peat. Mr. Ollerhead of Wimbledon, we have noticed, grows this Fern extensively and successfully and never troubles himself about peat, and he has established a large stock of healthy plants in a very short time. It is a question if peat has not been over-estimated in the culture of Ferns; at any rate it is clear that this fine Maidenhair will flourish without it as well if not better than with it. As the period for the repotting of Ferns is arriving it would be well for those who have not a command of good peat to try a mixture of loam, leaf soil, and sand for the culture of these elegant plants.

— A WELSH reader writes, "About this time of the year complaints are often made about *ALTERNANTHERAS* KEEPING BADLY or dying off altogether throughout the winter. That they can be kept in excellent health I had proof of the other day by some plants which were wintered by Mr. Henderson at Thorsby Park. They were in as robust health as ever I saw any in August or September. If Mr. Henderson would say through the Journal how he treats them with such perfect success, he would do a service to the community at large."

— ON January 22nd at the residence of A. R. Whitney, Illinois, was celebrated the 86th BIRTHDAY OF NATHAN WHITNEY, father of A. R. Whitney. The son had, very commendably, arranged a surprise party in honour of his father. They had killed the fatted calf and loaded the table with the delicacies of the land. It had been arranged that the pioneer horticulturists of the state should be present. Four generations of Whitneys sat down to that table that day. It is remarkable that four brothers of this Whitney family still live there, whose ages are respectively 82, 86, 92, and 94. Mr. Whitney is the king of orchardists in the United States. His crop of Apples the past season amounted to 25,000 bushels, and his purchaser of Apples foot up 15,000 bu. He made 2800 barrels of cider and vinegar. His cider is that which is eight on years old. His orchard embraces 165 acres and is about 20,000 trees.

— IN connection with AMSTERDAM EXHIBITION, which was noticed last week, there is to be a Congress. The subjects for discussion will be divided into three divisions—1, Botany; 2, Horticulture; 3, Vegetable Products. The questions proposed to be discussed in relation to horticulture are the following:—What is the best way to organise experimental gardens and horticultural laboratories? The best mode of conveying instruction in horticulture. The permanence of varieties among bulbous plants. The influence of manures on cultivated plants, especially on Hyacinths, Tulips, and Cabbages. The best method of ventilating greenhouses. The influence of coloured glass on the development of flowers.

— THERE is no other leaf of *Pelargonium* so durable, so Fern-like and graceful for bouquets, as that of *P. fernifolium* (?). "Spray" is a word peculiarly appropriate as applied to this leaf, since it is so divided that little else besides the main veins are left. The "Skeleton leaf" is better known. Yet this is as coarse, compared with the other, as the common Samach (*Rhus glabra*) is compared with its cut-leaved form (*R. gl. laciniata*). The leaves are borne upon long slender petioles, and the mid-vein so curves as to give to the whole plant a rounded, almost drooping habit. Yet, though short-jointed and close-growing, the leaves are so slight that a newspaper can be read if held upon the other side of the plant. When used in bouquets these filmy leaves furnish the much-needed bright green without concealing the flowers, and the long petioles reach the water, and are thus preserved quite fresh as long as the bouquet is worth retaining.—(*American Journal*)

— DR. H. HOFFMANN of Giessen has recently published the results of his observations on the formation of HONEYDEW UPON THE LEAVES OF PLANTS, and has come to the conclusion that it is not to be attributed to the aphid or other insects. A healthy specimen of *Camellia*, which afforded an instance of the phenomenon, was found to be entirely free from insects. The so-called honeydew consisted of a sticky colourless liquid, which possessed a sweetish taste, and contained principally gum. This gradually appeared on the surface of the leaves, slowly forming drops on the under side, which dropped down to be continually replaced. The separation of the liquid continued vigorously for some time, even after the removal of the leaves from the plant. Although showing that the appearance of the dew is not attributable to insects, Professor Hoffmann

was unable to ascertain the real method of formation.—
(*Nature*.)

— In a paper read before the San Francisco Microscopical Society Mr. J. P. Moore states that *PINUS TUBERCULATA* can be readily distinguished from other species from the fact that it bears its cones on the main trunk of the tree, giving it a singular appearance, as they are arranged around the trunk almost in a circle. Usually five, though often seven cones compose the circle: sometimes two or three of these circles of cones will be crowded together. A peculiar feature of these cones is their mode of attachment to the trunk. It may be observed that the bases of the cones rest against the bark, and that they are so firmly fixed as to bear the pressure of several hundred pounds without breaking off. These cones appear upon the trunk while the tree is young, and never shed until the tree dies or has been felled, and even then they do not open for a long time.—(*American Cultivator*.)

— THE first number is issued of an important publication, "THE WILD FLOWERS OF AMERICA," by Dr. D. L. Goodale, Professor in Harvard University, with coloured illustrations by Isaac Sprague. The number consists of figures of five species in four plates, and the plates are accompanied by a botanical description together with some gossip about folk-lore, popular names, &c.

THE CULTURE OF PRIMULAS.

The *Primula* being one of the most useful and effective plants for autumn and winter decoration, also for affording flowers for cutting, that it may be useful to state how I produced the good specimens which were noticed in the *Journal* a few weeks ago. They were grown in small 48-sized pots, some of the plants being 2 feet in diameter, each carrying 150 to 200 flowers, some of which measured 2 inches across. I grew two varieties of Mr. Williams's strain—namely, *sinensis fimbriata* and *filicifolia*, white and red.

My mode of culture is as follows:—The seeds are sown in February in shallow square pans. The pans are well drained with crocks, over which is placed a layer of moss. Although the pans are shallow the moss holds moisture for a long time, which is a great point in rearing *Primulas*. The pans are filled with well-decayed leaf soil sifted through a rather coarse sieve, not pressing the soil firmly, but leaving it rough on the surface. The seed is sown thinly and not covered, but is sprinkled with water at about 70°. The pan is covered with a square of glass, and is placed in a stove where it is quite away from the direct rays of the sun. The reason I prefer square pans for seed-sowing is that I find them much more easy to cover with glass than round pans. Very little water is required until the seed has germinated, which I find with this treatment is in about fourteen days from the time of sowing. When the seedlings appear freely sifted leaf soil is sprinkled amongst them. I have often seen the roots incline to come upwards instead of taking to their proper home; hence the sprinkling referred to, which I have found to be beneficial.

As soon as the seedlings are large enough they are pricked off into pans of the same kind filled in the same manner as before, with the exception that a little loam is used with the leaf soil, and they are placed on a shelf in a warm structure. As soon as they have filled the pans with roots, which is about the middle of May, they are potted singly into 60-sized pots, using this time a little stronger compost. The seedlings feel their removal but very slightly, after having been previously grown in leaf soil. They are potted rather firmly. Until this season I was under the impression that the *Primula* did not like firm potting, but I potted these plants when I gave them their final shift as firmly as I should *Parlagoniums*, and I have been well rewarded. About the end of May or beginning of June the plants are placed in a frame, shading them during the hottest part of the day. As soon as the pots are well filled with roots, which is about the middle of July, they are potted into 48-sized pots well drained, using about two parts and a half of good loam, one part of leaf soil, and a half part of two-year-old fowls' manure, adding a little pounded charcoal, and plenty of silver sand. They are afterwards placed in a cold frame, affording them plenty of room for a free circulation of air amongst them. They are syringed slightly after the shading is removed about four o'clock in the afternoon. All the air possible is admitted during the day, and the ventilators are left open about 2 inches at the back of the frame at night. The roots are never allowed to become dry, liberal supplies of water being indispensable to the well-doing of the plants.

After the middle of August a pinch of guano is sprinkled over the surface of the soil once a week, which is of great assistance to the plants, improving the size and colours of the flowers. The flower buds are pinched out until the middle of September, after which time they are allowed to remain and expand. About the end of September or the beginning of October the plants are removed from the frame and are placed on a shelf in a greenhouse. They are in full beauty by the middle of November, and continue flowering freely until the present time with the assistance of a little guano and manure water.—J. PITHERS.

DINNER TO MR. JOHN LEE.

We noticed in our last issue that it was the intention of some friends of Mr. Lee, who were members of the Horticultural Club, to invite him to a complimentary dinner at the Club house on the occasion of his retirement from business after an honourable career of fifty-four years. The dinner took place on Thursday evening last, and was in every respect a most successful one. A very large number of horticulturists met to do honour to their guest, many having come from various parts of the country for the purpose. The chair was occupied by Dr. Hogg, and the vice-chair by the Hon. and Rev. J. T. Do caven. Amongst those present were Messrs. G. F. Wilson, H. J. Elwes, Lewis H. Killick, J. West, Dr. Masters, Rev. H. H. Dombtrain, Herbert Adams, T. Moore, T. M. Shuttleworth, E. R. Cutler, H. K. Mayor, Henry Webb, H. G. Quilter, Smith (Kew), A. F. Barron (Chiswick), Harry Veitch, Bull, McManus, C. Turner, G. Paul, Wheeler, Wills, Deal, Francis Rivers, Matthews, A. Henderson, Charles Lee, Williams, &c. The tables were most beautifully decorated by Mr. Wills with his acclimated taste, who thus desired to show his respect for the guest, and the choicest flowers and plants were lavishly used for the occasion. Mr. L. H. Killick contributed a fine collection of fruit for the dessert. The dinner was of the most *rêcherché* description, and reflected great credit on the manager of the Club.

The toast of the evening, the health of Mr. Lee, was proposed in feeling and appropriate terms by the chairman, who alluded to the historical character of the firm, and how during its long career it had been bound up with the progress of horticulture in this country. He spoke also of his own long friendship with Mr. Lee, and tendered him on his own behalf, and that of those assembled, the right hand of fellowship, wishing him long life and happiness to enjoy his well-earned rest. Mr. Lee, who on rising was received with hearty cheers again and again repeated, acknowledged with much emotion the compliment which had been paid him, so unexpected and yet so welcome, and cordially thanked all those who had been in any way instrumental in paying him this compliment and the many friends who were present, and said that the recollections of this evening would ever remain in his memory. Among the other toasts proposed were the Chairman, by the Rev. H. H. Dombtrain; the Vice-Chairman, by H. J. Elwes, Esq.; the Horticultural Club, by Dr. Masters, &c.

There was but one sentiment expressed by all present, that of unmixed satisfaction at the complete success of the dinner.

SPECIAL SHOWS.

More than one of your contemporaries have made some remarks not over-complimentary about "special societies." One of them cannot see the use of the said societies, unless, perhaps, one for the encouragement of the Potato; and another would like to know what good there is in fostering the separate existence of such bodies as the Carnation, Auricula, and Chrysanthemum Societies. Now, I happen to know that there are many gardeners ready to ask just such a question, and perhaps some amateurs. I answer this question by asking them another—What is the object of cultivating flowers at all? Gardening has been called "the purest of human pleasures" by the sage and the philosopher, and the man who takes a special personal interest in his flowers is the man who derives the greatest benefit from his garden. An Auricula exhibition does good in many ways: it stimulates the growers to put forth all their powers to bring their plants up to the highest state of perfection. They are each eager to stand first in the race, and their flowers are watched and tended with incessant care. All this gives pleasure which is unknown to the man who has not himself run in the race and been first at the goal.

Then there is another pleasure for the growers after the arduous labours of staging the plants: New acquaintances are formed, and old friends meet to talk over matters connected with the flowers in which they are interested; and special shows promote the culture of favourite flowers, and to those shows which have been held yearly for three-quarters of a century we owe the great improvements that have been made in the *Anriela*.

An *Anriela* show in London or Manchester brings growers from different parts of England, from Scotland, Wales, and even Ireland who are growers but not exhibitors. They see the flowers as they may not have seen them before, and to see Booth's Freedom with nine perfect pips, or Smiling Beauty, the fairest of the fair, or some rare old variety like Page's Champion, is worth a journey from Ireland or Aberdeen. Such success has not yet fallen to their own lot, but they will go home carrying many pleasant reminiscences with them, and they will also try to emulate the growers who exhibit at the great show. It is not worth while to dwell on other flowers, the Tulip, Carnation, or Pink; but as there will be three great "special" shows of Carnations and Picotees this year—London, Leeds, and Manchester, it may be worth while to consider whether they "claim any special notice," or whether they have accomplished anything after all. There are others who have been in the field for many years, and who could say much about the pleasure they have derived from the culture of these flowers, and how they have been fostered and improved by the aid of special societies; and some of the old growers, such as Mr. E. S. Dodwell, who grew for exhibition when most of us were headless boys, could if they chose tell us of the good they and their fellow exhibitors derived from studying the habits and characteristics of their plants.

One reason why this matter has been taken up at the present time is the alteration in the arrangements of the Royal Horticultural Society. Growers fancied that no prizes would be offered; and the Royal Botanic Society, who gave prizes for them, have also turned from the Carnation, Picotee, and Pink. Are the florists to blame for espousing the cause of their own favourites? I trow not. They cannot go in for Potatoes, nor will they throw cold water in the faces of those who wish to promote their culture. Mr. K. Gilbert, ever first to espouse the cause of the Cabbage or Potato, has already suggested that the growers take the matter in their own hands, and if they go into the work with the same zeal as the florists there will be no need to trust to seed firms or royal societies. They will find ready sympathisers in the florists, who know from experience the amount of labour to be endured before the work is accomplished.—J. DOUGLAS.

POINSETTIA PULCHERRIMA PLENISSIMA.

MR. TAYLOR (page 123), who can grow the old *Poinsettia* so well, will, I think, be satisfied with the new one another year, if he does not, as so many do when they obtain a celebrated plant, weaken it by an exhaustive system of propagation. I have not been able to "try my hand" at growing the new plant, but my neighbour has, and as he has succeeded and not succeeded, and as I know the "reason why," I can write just as usefully as if I had been the actual grower.

My neighbour purchased two plants of the new *Poinsettia*. Both of them on arrival were, on account of the great demand and rapid propagation to meet it, found to be necessarily small and weakly. The largest of the two plants was encouraged to grow in the best manner possible, and was not permitted to receive any checks either by stopping or deficiency of support. This plant perfected a very good head of eleven distinct crowns. The other and the smaller plant was also grown as well as possible, but was stopped and the cutting was struck. Other cuttings were subsequently taken, and the stock now numbers a dozen plants. The heads produced by these small plants were very poor and unsatisfactory. Success was clearly the result of a luxuriant plant, non-success the result of weakly plants.

Now I do not suppose it possible that small plants purchased last spring could by any course of culture be so vigorous in their nature as were the plants which produced the gorgeous heads which Messrs. Veitch had grown in 1875. I had the opportunity of seeing those heads, and I can only justly describe them in one word—magnificent.

As I am a believer in the dictum that what has been done once can be done again, I am very hopeful that with strong cuttings to begin with, no stopping throughout the season, and

a course of generous treatment, resulting in really vigorous plants, that infinitely better results will be produced in the next than was the case in the past season, and I am satisfied that another year of experience is needed before a just judgment can be pronounced on this closely propagated plant.

The bracts produced by the small plants referred to were not nearly so bright as those on the more vigorous plant and larger crown. When I saw the new variety at its best the colour was decidedly brighter than that of the old species—rich as our old friend is acknowledged to be.—EX-EXHIBITOR.

Your correspondent, Mr. S. Taylor, has, I think, somewhat prematurely expressed his "disappointment with the new *Poinsettia*." I received my plant from the Messrs. Veitch (not a strong one); it was placed with my other *Poinsettias*, and was in due time reported. The soil used was three parts turfy loam, one part peat (Epps'), some silver sand and charcoal. It received the same treatment as the other plants. On its first forming its head of brilliant colour I found the outer or lower bracts rather smaller and not quite so intense in colour as those of the old species; this may have arisen from the plant not being a strong one. It takes fully a month longer after first showing the colour in its lower leaves before its centre or the clusters from its flowers are fully expanded. When so grown it forms a well-filled compact head, which if not grand is very great improvement on the other two sorts which I grow. I consider it very fairly sustains the character given of it, and I think it probable that stronger plants will produce still finer heads.—Geo. W. GREENHILL, *Whist House, Ashford, Kent*.

SELECT FRUITS FOR SMALL GARDENS.

UNDER this heading "PRACTITIONER," on page 98, has submitted a short list of varieties, and has appended the request that those criticising should substitute other varieties rather than add to the length of the list. I think in the main that your correspondent is right in limiting the varieties of fruit for a small garden, but I cannot but think that in many gardens which may be included in the designation "small" a few more Apples than those named might be advantageously included. The subject broached by "PRACTITIONER" is a very important one, and on the whole he has submitted an excellent list—his object having been to select old sorts of established merit rather than to include new introductions.

I will commence my criticism by saying that I think the Grapes and Peaches named are sufficient, and excellently adapted for the great mass of small and medium-sized gardens and for ordinary cultivators—that is, those requiring a succession of good fruit certain of being produced under ordinarily good cultivation; yet I may add in reference to the Grapes that those who have conveniences for ripening Lady Downe's Seedling and Gros Guillaume may also include a Muscat, and I recommend the Bowood or Tynningham Muscat as setting somewhat better than the splendid old Muscat of Alexandria. I mention this because I know there are many who covet Muscat Grapes, but are afraid of planting them on account of imaginary difficulties of cultivation and the fear of not being able to afford them sufficient heat. I repeat, therefore, that those who can grow satisfactorily the two late black Grapes named may grow also the Bowood Muscat, which I think is identical with Tynningham Muscat.

The list of Peaches being excellent, I pass on to Nectarines. "PRACTITIONER" has named two, and two are quite sufficient for many gardens, but those named—Violette Hative and Elruge—are ripe at the same time; in fact they are very nearly alike in all their qualities. For the sake, therefore, of having greater distinctness, and especially as affording a succession of ripe fruit, I should certainly substitute Lord Napier for Elruge. Lord Napier is distinctly early, the tree is a good grower and bearer, and the fruit is large and of excellent quality. It is one of the very best Nectarines in cultivation, and is worthy of a place in the smallest collection.

Figs I will pass over with the remark that those who enjoy this fruit and have not grown Negro Largo have a treat in store. I say this without finding any fault with the two good old sorts recommended—Drown Turkey and White Marselle.

Appropriate, I think, call for no comment, but I must pause at the list of Plums recommended by your correspondent. I cannot conceive any collection of Plums complete without including Rivers's Early Proflic. It is a variety of the greatest value, and ought never to be overlooked by intending planters.

As I must not extend the list I would take out Kirke's, because that good Plum is in use almost at the same time as the still more useful variety Victoria. An excellent small collection I consider the following:—Early Prolific, Green Gage, Goliath, Victoria, Cox's Golden Drop, and Damson. If two Plums only are wanted my choice is Rivers's Early Prolific and Victoria, which are profitable varieties for planting in large numbers.

In the list of Apples "PRACTITIONER" has included both Lord Suffield and Keswick Codlin. I doubt if both are required in a small garden. If for pyramids or espaliers I should choose Lord Suffield; if for standards Keswick Codlin. I make the distinction, because the large fruit of the former valuable Apple is apt to be blown off standard trees in exposed places. I should substitute Cellini for one of the sorts named. Hawthornden cankers in light soils, and I generally prefer Sirling Castle. Bessop's is named—an excellent Apple, but a lifetime before arriving at a free-bearing state. The list given is otherwise good, but a garden cannot be completely stocked with Apple trees that does not include Cox's Orange Pippin. Beauty of Kent for early winter and Gooseberry Apple for late spring are valuable culinary sorts.

In the list of Pears your correspondent has included Beurré de Rance, but in many places that late Pear refuses to ripen; a late sort more certain, and I think more generally useful, I consider Bergamotte Espéran.

The remainder of the fruits named are, I think, well selected. In criticising I have acceded to "PRACTITIONER'S" request by substituting a few sorts for those mentioned in the list referred to, and which is worth perusal by those making a "selection of fruit for a small garden."—A NORTHERN GARDENER.

SQUIRRELS AS DEPREDATORS.

MUCH as I admire the feeling which animates a "WILTSHIRE RECTOR" in his dissertations at page 108, I cannot agree with him as to the harmlessness of his *protégé* the squirrel. For over forty years I have had ample opportunities for observing the habits of squirrels, and know from actual observation that at times they destroy more than they get, and get more than they have any right to. Some twenty years ago I could not account for the disappearance of the Strawberries from an early plantation, but one morning I saw numbers of "Blondins" (I should think two or three generations) hop across from a quarter of Currant trees, each seize a Strawberry, and away to the woods went they, but if suddenly disturbed would take refuge on an old Pear tree which was near. When they considered all danger was over they would renew the attack. I was cruel enough to send them a few messages in the form of shot, and before seven o'clock the next morning I had destroyed upwards of a dozen, and I felt no compunction for the deed. After that slaughter my Strawberries were unmolessted.

I have also had numbers of Apricots, Peaches, Cherries, Nectarines, and Filberts taken by squirrels—Apricots more especially; and, from that part of the wall where "that gardening boy" could not reach were he so disposed. I have frequently seen them nibbling away at a half-ripe Nectarine on the top of a lofty Pine tree, and more frequently picked up a half-destroyed fruit under the Pine or Cedar trees, whichever were most convenient for them. I have also seen them run along the parapet or coping of a wall, and when they arrived at a tree bearing fruit suitable to their palate drop down, take one, and carry it off. I have (much as I dislike steel traps) been cruel enough to bait several traps, place them on the coping, and after securing several of the "graceful" thieves, and scaring others, the fruit was safe from the marauders.

My organ of destructiveness is not very largely developed, but when I have an enemy I feel bound to fight till I conquer, and I consider that when a gardener has produced a crop of fruit that he is equally bound to preserve it.—J. GADD.

MANY years ago I was a mischievous "garden boy," and once stole a Peach from a young and favourite tree then bearing its first crop in a vinery. The owner was naturally greatly chagrined when acquainted with the fact by his gardener—not the fact of my being the culprit, for I kept that knowledge to myself, but that anyone should have been guilty of stealing from that particular tree.

The owner conferred with his experienced and sensible steward, the result was that all the men and boys in the garden were what is known as "carpeted," the carpet in that instance being one of Nature's weaving—the "mossy lawn," beneath the shade of an ancestral tree. The "old man with silvery

locks" then addressed his assemblage somewhat as follows:—I am desired to speak on a matter which to you may appear trifling, but which Lord — regards as serious. His lordship, as you know, is not a hard master, and the value of a hundred Peaches are nothing to him, but that one Peach—the first of its kind which had ripened in his garden—was being anticipated with special interest, and someone stole it. No one amongst you is suspected as being dishonest, and not one of you is permitted to deny having committed what was doubtless merely a thoughtless act. I am only desired to urge on one and all never to take on the sly what you would be ashamed to take openly, for his lordship wants to feel that everyone in his employ is trustworthy and honourable. The one who took the Peach may, if he chooses, admit to the gardener having done so, the gardener having undertaken not to mention the confession to anyone, and in fact is prohibited from doing so to his lordship and myself.

That was the gist of the "old man's" address. It left me very uncomfortable, and after one sleepless night I confessed my fault to the gardener, and I cannot look back to any circumstance with greater pleasure than to the taking advantage of the "conscience clause," and certainly I have never since—in the sense of stealing—taken fruit which did not belong to me.

Shortly after that episode several Peaches and Nectarines were misused from the south wall of the garden, and other fruits were nibbled and left on the trees. Many hundreds of fruits were "stolen," and I was told by the gardener that had I not so willingly confessed my former fault I should have been suspected of the present and greater delinquency. There was a reward of having done right—a good name following the acknowledgment of a bad deed.

Determining if possible to find out the rogues, I decided to pass the night in the garden ensconced amongst the Currant bushes. It was not until daybreak that I obtained "a clue"—a most convincing one. First one squirrel came, then another, until at least a dozen of the "agile creatures" were "trying" the fruit, and carrying away those which separated easily from the spurs. The gardener was told of the circumstance, but was not convinced until he saw the same "little game" repeated the next morning. There was nothing for it but to destroy the robbers, which were mercifully shot, and not cruelly trapped. Many times since then I have known squirrels to have committed great depredations on the Peach walls, having repeatedly seen them carrying off the fruit.

I have read with great pleasure "WILTSHIRE RECTOR'S" humane letters, and I trust he will never cease wielding his pen against heedless pain being inflicted on any dumb animals; but I cannot allow "that gardening boy" being made the scapegoat for the pilferings of "those graceful creatures" the squirrels.—AN OLD GARDENING BOY.

AMOUNT OF WATER IN TREES.—FARMERS and gardeners have often observed, and the fact is referred to by Lindley, that during cold weather the branches of certain trees are sometimes so much bent down as to obstruct passage below the tree, but that with the advent of mild weather they return to their former positions. In investigating these phenomena Professor Gelezou observed that they depend not only upon temperature but also upon the humidity of the air, and he undertook, therefore, a series of researches to ascertain the amount of water contained in different parts of the branches under various atmospheric conditions. The first part of these researches (not yet published) proved (1) that the amount of water increases in each branch from its base to its summit; (2) that the bark of the Larch throughout the year contains more water than the wood; and (3) that in Conifers the upper part—i.e., the part above the pith of a horizontal branch, contains always more water than the lower part, whilst in other trees, as, for instance, the Birch, the conditions are reversed; altogether, that Conifers and Dicotyledons seem to possess opposite properties as regards the distribution of water in the tree. Further researches, published now in full (*Bull. Ac. de St. Pétersb.*, vol. xxii., No. 3), introduced new elements into the inquiry—namely, the varying amount of water in the bark and the wood. It appears from these researches that humidity of the wood and dryness of bark have a constant relation; that in certain trees (Fir and Maple) the wood remains throughout the year drier than the bark, while in others (Birch and Aspen) this is the case only during a part of the year, the conditions being reversed at other times. The re-

lations between the humidity of the bark and that of the wood are so constant that a useful classification could be based on them. It appears, further, that the smallest amount of water contained by the branches of certain trees, as, for instance, the Fir, is observed during the season when the vegetation is in fullest vigour, and that this circumstance, as well as some other important facts, is in close relation with the development of leaves. Altogether the researches, which are yet far from being completed, promise to disclose, and probably explain, a variety of very interesting facts.—(Nature.)

PRIMULA INTEGRIFOLIA.

SINCE attention has been more particularly directed to old species of garden flowers, this somewhat rare *Primula* has been required for. Only a few of the modern gardeners know this plant, and fewer possess it. Not that sufficient time has not

elapsed for its increase, for it was known and was probably more plentiful in Phillip Miller's time than it is now; at any rate it is alluded to by that old author, who quotes descriptions of it by Haller, Scopoli, Jacquin, and others. It is a dainty gem from the Swiss, Pyrenean, and Austrian mountains, having somewhat of the habit of *P. auricula*, but flowers perhaps less freely than that species. In foliage it is perfectly distinct. The colour of the flower is a deep rosy red, with a white centre and yellow anthers. It is a hardy plant, but cannot endure stagnant water, and is worthy of the shelter afforded by rugged stones or rockwork. Mr. G. F. Wilson is successful in the culture of many delicate alpine plants, by protecting them with stones set on edge, forming triangular recesses for choicest species. Mr. Matthews of

Weston-super-Mare has also provided earthenware protections, which cannot fail to be useful for "old and rare" alpine plants of low stature and subject to injury by prolonged wet. A plant of *P. integrifolia* was figured in the "Botanical Magazine" more than half a century ago from a specimen raised by Mr. Loddiges from seeds which had been sent from Austria. It is readily increased by offsets of the roots, which are produced freely; the plant, in fact, may be said to grow more freely than it flowers, still it is a "dainty alpine gem" worthy of notice.

WORTLEY HALL,

THE RESIDENCE OF EARL OF WHARNCLIFFE.

THIS grand old English mansion is situated in the midst of a thickly populated district, nine miles from Sheffield and five from Barnsley. The Hall is a fine stone mansion, which covers nearly an acre of ground, and is encircled by verdant lawns and thriving shrubberies. The Earl of Wharnccliffe is the owner of other estates, as extensive as Wortley, in Scotland and the north of England, besides possessions in Cornwall and elsewhere; but the Wortley estate is the most valuable, on account of its coal and other minerals. In the seclusion of the parks, which extend around the Hall on every side, the stranger would never suspect that he was in the centre of one of the most densely populated industrial districts in England, and that underneath the very ground on which he stood there was for miles in all directions a working population, day and night, nearly as numerous as that above ground. Though none of the pit shafts or villages, or even a house, are visible from the Hall, because of the surrounding woods, the pit "workings" are pushed up to within a few hundred yards of it, and

so near the surface do they come in some places that the sound of the colliers' mattocks can be heard from the surface, while the colliers can hear the travellers' footsteps overhead. This is near the "outcrops" however; for in other directions the coal seams descend rapidly to a depth of some 200 yards. Not far off is the fatal Oaks Colliery and Swaith Main, which within the last few years have entombed at least seven hundred victims, besides other explosions, bringing the destruction of human life up to nearly one thousand.

The present Hall is a comparatively modern structure. The original mansion (Wharnccliffe Lodge) was built in 1510 by Sir Thomas Wortley, that he might have the pleasure of hearing the wild duck's bell, a sylvan sound that appears to have been very pleasing to our ancestors. This lodge, a part of which still stands, was at Wharnccliffe Chase, about three miles from the present Hall, and now forms a deer park 1000 acres in extent. Here also is Wharnccliffe Oak Wood, which comprises

about 2200 acres of land, and is said to be the most extensive in England, and Wharnccliffe Crags, the traditional home of the "dragon of Wortley," which ate up "geese and cattle," and everything that came in its way,

"Save the stones poor Jack which
it could not crack,
And you'll find them there on
the hill."

Through the kindness and liberality of the Earl of Wharnccliffe nearly the whole of this vast tract is absolutely free to the public three days in the week, and Wortley station is a regular depot for "specials" during the summer season, bringing thousands from Manchester, Liverpool, and Yorkshire. It is the birthplace of the Hon. Edward Wortley Montague; and the accomplished Lady Mary Wortley Montague, ancestress of Lord Wharnccliffe, spent a considerable portion of her time at Wharnccliffe Lodge,



FIG. 19.—PRIMULA INTEGRIFOLIA.

from which part of her correspondence is dated. She it was who introduced inoculation into this country from the east, and which led eventually to Dr. Jenner's famous discovery of vaccination. Lady Mary first experimented upon her own little son, who was inoculated from a Turk. This boy afterwards became the famous "Turk Wortley," and died, it is said, in the Mahomedan faith. I saw a half-length portrait of this member of the family in his Turkish robes hang in the Hall, and I can say a "perfect Turk" he looks.

From the top of Wharnccliffe Crags, more than 1000 feet above the sea level, the spectator gazes upon one of the most extensive and perfectly panoramic views in England—hill and dale, wood and water here all unite to make one of the most beautiful rural scenes imaginable. Far down in the valley of the Don below the landscape is spread out before you like a map, and away beyond rises the Yorkshire hills, which form part of the "backbone" of England. The crags, as they are called, form a precipitous ledge of rocks some three miles long, and everywhere lifted and rent in the most irregular manner. They remind one of Salisbury Crags near Edinburgh, only that the tops of the ridge seem to have toppled over at its upthral and rolled down into the valley below, which is everywhere strewn with huge fragments of rock, many of them perhaps 50 or 100 tons in weight. Passengers from London to Manchester via the Great Northern railway pass through five or six miles of Wharnccliffe Wood; at the bottom of the valley and on both sides of the line great boulders are to be seen centered in every direction, but they are now green and mossy, and half concealed with Ferns and undergrowth.

With this brief description of the extensive woods, and parks, and crags of Wharnccliffe Chase we now retrace our steps and turn to the modern gardens of Wortley Hall. I

had heard so much of the fame of Mr. Simpson, and knowing his name was a "household word," I had long felt an inclination to pay him a visit, and though it was the 1st of December, one of those pitiless rainy days, nevertheless I was amply rewarded with what I saw. Dull December is not the most favourable month in the year for visiting garden establishments and giving reports thereon, but at a place like Wortley there is always some interest and something to be learnt and remembered. Having left the picturesque scenery of Wharfedale Chase we now reach the kitchen gardens. These are said to be three acres in extent, and a good portion will be covered with glass which at present is rather limited for the wants of such an establishment, but vegetables and salads appeared to be abundant. The gardens stand on elevated ground, about 700 feet above the sea level. The climate is cold, and the more tender fruits often suffer. The gardener's cottage is situated at the west end of the garden near the

ranges of glass houses, and starting at this point we will begin with the first block, which is 130 feet long and divided into four divisions, three of which are vineries. The first house is 30 feet long, 16 feet wide, with a hipped roof. All the Vines are Muscat of Alexandria. The fruit was ripe early in August; several bunches that were still hanging would weigh from 3 lbs. to 4 lbs. each. The Vines were planted in 1867 4 feet apart, and there are two rods to each Vine. In this house the wood was strong, short-jointed, with large round prominent buds. What little foliage was left on the Vines was thick and leathery, and it bore no traces of having been in the least degree infested either with thrips or red spider. At the winter cleaning of the houses the Vines are never dressed, nor is any of the loose bark removed from them. The second house is also 30 feet by 13, and planted with young Vines. Of the sorts I noticed Black Hamburgh, Gros Colman, West's St. Peter's, Royal Muscadine, Buckland Sweetwater, Golden Queen, which

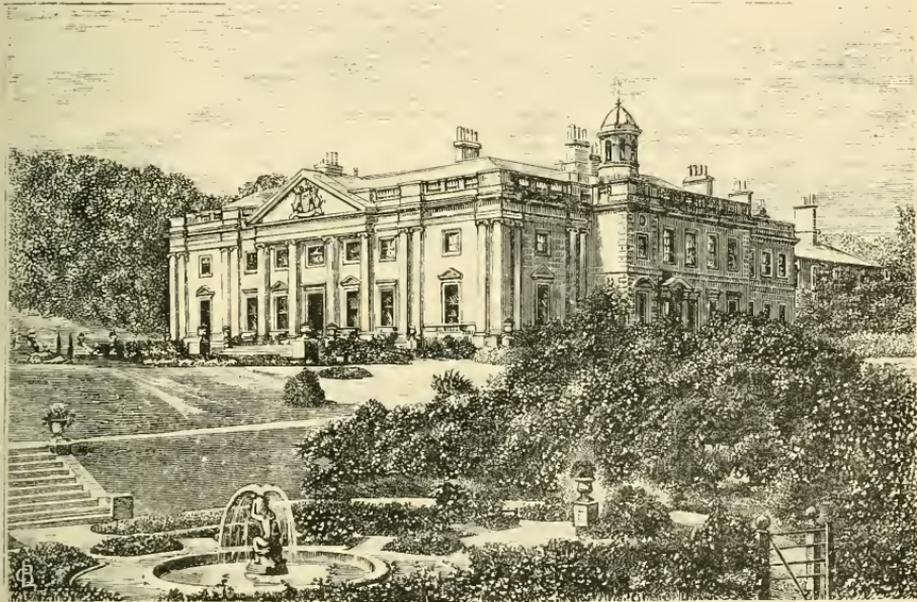


Fig. 20.—WORTLEY HALL.

will remain a lasting memorial of its skilful raiser; Duke of Buccleuch, Vienna's Black Muscat, which has not proved so good as the Muscat Hamburgh, which it was in all respects to supersede; and the Golden Champion, the wood of the latter being twice as strong as that of any of the other Vines. While so many gardeners give the Golden Champion a bad character, Mr. Simpson has succeeded in producing some splendid bunches of this variety. The house was filled with store pots of succulents for the summer flower garden. The third house contained Vines in pots, of which I counted sixty just pushing into growth, and from the manner that they were breaking they promised an abundant and useful crop of fruit. Generally it is found difficult to excite pot Vines before Christmas unless they have been prepared for the purpose the summer previous; but these appeared to break as freely the first week in December as if it had been the middle of February. Besides the Vines in pots there were large batches of Azaleas, Roses, Lily of the Valley, &c., for early blooming. The last house in this range was used for miscellaneous greenhouse plants, and contained good specimens of Azalea, Camellia, Roses, Heath, Epacris, Pimeles. From the roof was suspended streamers of Tacsonia Van-Doixemii, Lapageria rosea, L. alba, Marcial Niel Rose, and Acacia Ricana, a most useful plant for the purpose. On the back wall was a large Rose of Souvenir d'un Ami. It is a most fragrant Rose, and trained against the wall under

glass it affords a handsome flower for the button-hole nearly every day in the year.

Leaving this block of houses we next entered a vinery 50 feet long. It was formerly in two compartments, but now both divisions are thrown into one. The Vines in one half of the house are planted in the centre of the inside border. They are taken to the roof and then allowed to form two branches; one is trained up and the other down the roof. They have been planted about six years, and though they were only intended to remain for two or three years, yet, having done so well, they have been allowed to remain undisturbed. The Vines which previously occupied the house were started into growth about Christmas, and by the end of June all the fruit was gathered, the old Vines cleared out, and these young Vines planted in a new border. As soon as the roots were set at liberty and entered their new pasture the Vines grew with great rapidity and made strong canes by autumn. The following season they carried a heavy crop of Grape, and have done so each returning year. They are chiefly Black Alicante and Lady Downe's, and when I saw them they were such as either Mr. Simpson or any other gardener might be proud of. This is a simple way of renewing a house of Vines without losing a crop. The next house was formerly set apart for Pines, but is now used as a plant house. In front of these houses I noticed a long border full of Lettuces about three parts grown, covered with

temporary lights and in the highest state of luxuriance. They were sown about the end of July, and when large enough to handle they were planted in rows 7 inches from each other and 4 inches apart in the rows. The sort—for there was only one—was Hardy Hammersmith. There were upwards of a thousand plants, which would supply the salad bowl for a considerable part of the winter.

Turning away from the Lettuce bed, which was really a grand sight on the 1st of December, we next passed through a small span-roofed house 21 feet long by 16 wide. It is used in summer as a nursery for young Vines that are being grown for forcing the following winter, but when I saw it was filled with a healthy batch of Cinerarias and bulbs for early blooming. Proceeding still onwards we enter the Fig and Strawberry house, 50 feet long. The Figs are grown in pots in an open pit in front of the house, and the Strawberries on shelves at the back. Forcing the latter was commencing, and they are brought in in batches of about four hundred plants at once. The last houses in this range were two upright vinerias 25 feet long each, and about 8 feet wide, with ridge-and-farrow roof. There are two Vines to each house. From the main vertical shoot other horizontal shoots emanate and are trained near the front glass. The fruit was all gathered and the Vines were at rest, but the young growth was somewhat marvellous. It was firm and well ripened, and about the strength of an ordinary walking-stick. If my memory serves me right the roots were in the inside, and combined with skilful culture, Mr. Simpson uses highly stimulating manures.

Crossing the kitchen garden we reached another range of houses. The first is a block of vinerias 100 feet long with Vines trained up the front rafters and along the top of the back wall. They were at rest awaiting their winter pruning. Here the growth was also remarkable for its strength and firmness. All available spaces in the house were occupied with plants grown for some useful purpose, and not the least useful among these was that most valuable plant for winter blooming, *Rhododendron ciliatum*. Beyond were two lean-to Peach houses each 25 feet long and containing two trees each. There were capital examples of Royal George Peach, Elruge and Stirling Castle Nectarine, the latter being found very valuable. These houses were filled with Strawberries in pots in promising condition. Upwards of 1400 are potted for forcing, which furnish ample gatherings from March till the time of Strawberries in the open air. Mr. Simpson finds the most useful for his purpose are Black Prince, Prince of Wales, and Vicomtesse Hericart de Thury. They were grown in 4½-inch pots and were in splendid condition.

Leaving the fruit houses we next reached a range of span-roofed plant houses which run north and south across the garden, and divided into three divisions. The first was for greenhouse plants, furnished with a stage in the centre and benches all round. It is a useful house, and contained a valuable selection of plants. There were semi-double Primulas, Roman Hyacinths, Erietas, Epacris, Epiphylums, Cyclamens, Camelliar, and Daphnes in beautiful bloom. The second compartment was for stove plants, and many of them were suitable for placing in vases. Here we found many of the most popular plants of the day, including some well-grown *Eucharis amaranthica* throwing up a wonderful crop of flower spikes; Crotons, such as *C. Weismanni*, *C. interruptum*, *C. majesticum*, and *C. Veitchianum* in excellent health; equally good *Draconas* of almost every size, shape, and colour. The most handsome for the table was *Draconea gracilis*, a plant of slender foliage and of elegant habit. There were also *Marantas*, *Alocasias*, and many other plants which form indispensable features in a plant stove. I must not omit the Ferns such as the popular *Adiantum farleyense*, *A. gracillimum*, *A. tenerum*, *A. macrophyllum*, *A. ocnium latum*, &c. One thing here is worthy of special remark in reference to the soil used for the Ferns—*Adiantum farleyense* was growing in peat alone, peat and loam mixed, and loam without peat, and those plants grown entirely in loam were twice the size of those grown in any other compost and twice as vigorous. On the roof was trained *Allamandas*, *Clerodendron Balfourii*, and *Stephanotis floribunda*. The third was an intermediate house, and contained many excellent plants. Near at hand was a block of warm and cold pits several hundred feet in length, used in spring for forcing vegetables, and summer for Melons and Cucumbers; but when I saw them some were filled with Tomatoes, Kidney Beans, bedding Geraniums, winter Cucumbers, and Strawberry; and one range contained one thousand nearly full-grown Lettuces.

Turning into the kitchen garden I observed it was well stocked with all sorts of winter vegetables; one flat of Broccoli contained sixteen sorts, or at least sixteen lots; with different names; Beet, Carrots, Saleary, and Parsnips are left in the ground, and the beds covered with leaves to protect the crows from the frost. These roots are found to keep much better in this way than when taken up and stored in sand or soil. Besides the Lettuce in pits and under spare lights thousands were planted in the open quarters. Round the various quarters I noticed many bush and pyramid Apple and Pear trees, and from their appearance I should presume they carried in average seasons tolerable good crops of fruit. I inquired of Mr. Simpson what sorts he found to succeed the best north of Sheffield, when I was informed that of Apples all the Codlins did well; Claggett Pearmain, an excellent desert Apple, has the flavour of the well-known Ribston Pippin; Lord Nelson, a very handsome table Apple; Lord Seaford, fine kitchen Apple; Hawthornden, a good Apple; and Tower of Glensis, an excellent heavy kitchen Apple. Of Pears, Williams' Bon Chrétien, Napoleon, Jargonelle, Beurré Clairgeau, Baronne de Mello, Knight's Monarch, Louise Bonne of Jersey, and Marie Louise. On a south wall was found to succeed the last two named, Glou Morcean, and Beurré Diel. The Cherries on a west wall were in excellent condition. Such sorts as White Heart and Black Eagle ripen at Wortley early in July, and are found very useful for dessert.

We now reluctantly pass out of the kitchen garden on to the spacious pleasure grounds. These cover an area of fifteen acres, and are kept in the most perfect order. The kitchen garden walls on the south side are judiciously concealed by a broad belt of shrubs, including many fine Hollies. Parallel with the wall there is an herbaceous border 700 feet long and 12 feet wide. This border is rich in hardy treasures, and to enumerate all that is beautiful would be impossible. Formerly this border was filled during the summer season with half-hardy bedding plants, but now it is filled-up with a choice selection of hardy perennial plants: it is not only a great saving of labour, but there is something useful for cutting nearly "all the year round." The gem of the border for late summer blooming was *Anemone japonica alba*, one of our very best hardy autumnal-blooming perennials. It produces luxuriant dark green foliage with a profusion of flowers as white as snow. Then there was *Tritoma uvaria grandiflora*, a stately genus of great beauty for broad borders; *Spiraea palmata*, one of the handsomest species of this beautiful genus; *Iberis corifolia*, *Lithospermum prostratum*, *Potentillas*, *Pentstemon*, *Phloxes*, *Dalrympleum*, *Polemonium ceruleum variegatum*, and many others too numerous to mention. The wall was covered with a choice selection of climbers, from the simple *Lonicera arce-roticulata* and the beautiful *Ampelopsis Veitchii* to the gandy *Cratogeomys pyraantha* and the aristocratic *Wistaria sinensis*.

We now pass on to a broad terrace walk flanked by lines of Roses of every hue and shade, and these again backed by stately Hollies. At the terminus of this walk there is a relic of old Sherwood forest—a majestic Oak 8 feet in diameter at its base, and 7 feet through 5 feet from the ground. It has occupied the same position for upwards of a thousand years, and exhibits no symptoms of decay. Turning to the left there is a broad glade 400 feet long and 100 feet wide. It is margined with Cedars, Pinuses, Yews, and the usual ever-greens that are found in places of such importance. From this grand avenue we reach the terraces in front of the mansion.

The flower garden is approached by different flights of steps, and here the scene becomes of the most enchanting character. Many of the beds are large, and bounded by margins of Yews and Portugal Laurels kept low by constant clipping. The climate is too cold for spring bedding to succeed. I much regret I did not see this fine flower garden when it was embellished with its twenty thousand plants. The water was drained from the fountain in the centre, and the basin was filled-in with dwarf common Laurels. On the east side of the parterre is an old conservatory with curvilinear roof. A stage occupied part of the centre, and round the outside were other stages. It was all aglow with *Chrysanthemums* and other bright winter-blooming plants, and was quite a picture of floral loveliness and beauty. Streamers dangled from the roof in grace and luxuriance, the most conspicuous being a very old plant of *Acacia Ricciana*. It is one of the oldest plants of its kind in the country, and it covered a large portion of the roof. This *Acacia* deserves more extensive cultivation, for it is exceedingly useful to cut from; its long pen-

dulous branches (from 2 to 3 feet long), when covered with flowers, renders it useful for various decorative purposes. Turning out of the conservatory we passed down a flight of stone steps into another flower garden, which Mr. Simpson informed me was generally filled with succulents during the summer. It had a fountain in the centre, and was bounded by Ivy, rockwork, and evergreens.

It is no more complimentary to say that the good keeping of the place reflected the greatest credit on Mr. Simpson, for in each department there was the manifestation of superior skill. I am indebted to him for his courtesy in enabling me to see the many interesting objects abounding on this extensive domain.—Q. R.

NOTES ON VILLA AND SUBURBAN GARDENING.

As was stated in "Notes and Gleanings" on page 105, many mistakes are made by planting large-growing Conifers where there is no room for them to develop. Doubtless those who plant them have reason to admire them for the first few years, after which the mistake becomes more apparent, and the great difficulty arises as to which ought to be sacrificed, and many times none are thinned-out, but they are left to grow one into the other, deteriorating in beauty every year. I submit that nine times out of ten the fault is that of planting too thickly, and then not watching the growth of the shrubs sufficiently close and thinning them out at the proper time. If the shrubs are left to become injured they are not easily remedied.

I dislike to see Decidars and other similar commanding Conifers pressed into a limited space where their true character and beauty cannot be attained; rather would I see small compact-growing shrubs planted, which would be more suitable to the limited space, and would increase in beauty year after year. The little lawns are then well kept in view, and the graceful curves by the paths are well maintained, and the background so prominently kept in sight that the following is seen to perfection. I like to see a handsome Decodar standing in the centre of a circular lawn of moderate size, with sufficient scope of grass round it to show it off to advantage, while other parts may be planted with Cupressus Lvsosyriana and others of a similar growth. *Cryptomeria elegans* is a grand Conifer to grow as a single specimen; while there is *Juniperus virginiana*, *J. excelsa* and *J. chinensis*, as well as *J. ericoides*, one of the prettiest and most compact; while among dwarfers growers there is *J. recurva* and *J. densa*, while *Abies pyramis*, a very pretty dwarf grower and almost an undershrub, but it looks well by itself. Thujas, too, always command themselves to any villa residence with small private grounds. Next we come to the common Yew, *Taxus baccata*, and the golden variety, which really look handsome by themselves and are easily kept within bounds. Irish Yews take up little room, but when well grown they are handsome specimens, while as affording contrast is the Swiss Juniper, erect yet compact growth, and always looks well.

It will be seen by the above that there is plenty of choice among dwarf or small-growing Conifers to satisfy anyone, and those named will grow in towns as well as in the suburbs. Those who need dwarfier plants still may plant the common Savin, *Juniperus sabina*, also *J. tamariscifolia*, both very pretty at all times.

I will now mention a few shrubs as commendable for villa gardens. One of the best is the variegated Aucuba, a general favourite in all towns. The *Laurestinus*, too, must not be forgotten; gold, silver, and plain Hollies must be included in the list as famous town plants. Several varieties of evergreen Berberises, such as *B. Darwinii*, *B. dulcis*, and *B. japonica* are all suitable. The *Arbutus*, too, sometimes does well, not forgetting the Sweet Bay and the variegated and green Box. The dark foliage of the *Phillyrea* always looks well, and it is also a robust shrub, doing well in towns. The common and Portugal Laurels may well be mixed among them. The *Eunomya*—the green, silver, and golden-leaved varieties—are handsome shrubs for town gardens.

With the above and a few deciduous plants mixed up with them, such as the large-flowering and Persian Lilacs, some of the *Acacias* and Maples of the variegated kind, the red Dogwood, the white and pink flowering *Thorns*, with here and there a plant of *Yucca gloriosa*, all judiciously planted and the colours blended together, an effect would be produced that would be at once cheerful and ought to satisfy the most fastidious.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

We have been forking over some of the ground that was dug or trenched in the autumn in order to get in the spring crops. It is very wet, indeed wetter than we ever remember to have seen it before at this period of the year. When our light soil is

in this state what can be said of wet districts where the soil is heavy? Even if seeds are of the very best quality, it is more than probable that a large portion of them will be destroyed by the wet cold soils. In large gardens, or even gardens that are not large, there is always refuse loam which accumulates from various sources, such as spent soil shaken from the roots of bedding plants which have been transferred from cutting-boxes to pots or other boxes, the surface of Vines or Leafy borders, or the old soil of Cucumbers or Melons. If this is kept regular and sifted it is of great value in such a season as this; a little of it under and over the seeds will make all the difference between perhaps no growth at all and a healthy lot of young seedlings. The seeds ought to have been brought in long before this time, but many delay purchasing until the seeds are required for sowing, and then grumble if the seedsmen cannot supply them at a few hours' notice. For our own part we order early, and take care not only to order from a good house, but also give the best price; bad seeds are not worth having at any price. Some amateurs and young gardeners are also apt to run after novelties to the exclusion of other proved sorts. Now it is quite right to try as many new varieties of plants or vegetables as one can find room for, but it is not wise to trust entirely to them. Those varieties which have done good service must be retained until we are quite certain that the new varieties are better than the old.

We have sown Early Scarlet Horn Carrots, Hicks' Hardy White Lettuce, and the olive-shaped breakfast Radish under the ground vineries. It would have been useless sowing in the ordinary soil, but the fine dry refuse loam, &c. was valuable for covering the seeds. We also planted out the Cauliflower plants which have been preserved in cold frames during the winter; they have grown so much, even with the lights off night and day, that it was certainly better to plant them out. The weather may change speedily to frost, and perhaps cold east winds will try the plants very much; but they have been planted in drills, and if necessary some manure laid over the surface of the ground will keep them safe from injury.

It will now be comparatively easy to keep up a supply of forced vegetables in succession to those that are now going off. Asparagus roots put in a little heat will soon grow up and be ready for use. Sea-sle will readily be forced by placing blanching pots or boxes over the roots, and enough manure or leaves to cause a gentle heat. Succession pots of Dwarf Kidney Beans can be brought on rapidly in any house, but they are better when the pots can be placed near the glass, as the stems are apt to draw up leggy in the early stages of the plant's growth. They like rich soil composed of good loam and a little decayed manure. The leaves suffer much from the attacks of red spider and thrips, but spider will not be likely to gain a foothold upon them if they are frequently syringed with tepid water and they do not suffer for want of water at the roots. If plants are well attended to with water and judicious air-giving they are not so apt to suffer from insect pests as are those which are badly cultivated.

VINERIES.

The late houses have been made ready for forcing in the way that has been already recommended. At many places the fruit is not keeping very well, it could hardly be expected to do so after so much wet and muggy weather. We are now reduced to Lady Downe's Seedling, which have now been cut for two months nearly, and the stalks put in bottles of water. A few berries have become mouldy, but these are promptly removed. The largest proportion of the bunches are almost in as good condition as on the day they were cut, the berries are plump and the footstalks quite green.

There is now considerable improvement in the early houses. When it was observed that the buds did not start freely they were not forced into growth. Now that the Vines show signs of vigorous development the temperature at night of the Hamburg house is 65°, and that of the Muscat house 70°, with a proportionate rise by day. There is now plenty of work tying-down and stopping the lateral growths. Except the leaders the other growths are stopped two leaves beyond the bunches. We are very careful with the tying-down; it does not answer to pull the strong rapid-growing shoots too much down at one time, as they are apt to snap either at the time of tying or afterwards. The seedlings raised by Mr. W. Thomson, also Canon Hall Muscat, have very strong young wood and require greater care than most other varieties. With increased warmth more moisture is required in the atmosphere; the evaporating troughs are kept full of water, and in bright sunshine the walls and paths of the house are sprinkled with water two or three times a day. We have placed fermenting material (stable manure), in the earliest houses, but when the young leaves appear it is very dangerous to allow even a small portion of rank steam in the house, as the leaves might be destroyed thereby, or at least suffer considerable injury. Those who have berries ready for thinning ought to lose no time in attending to it. One who has had sufficient practice in this work can thin-out a sufficient number of berries all at once. It is not possible to do the work

and knead well until of the consistency of soft soap, and plaster this smoothly round the lower parts of the grafts. If the composition should crack in drying the fissures should be closed, excluding air, and the grafts, all other conditions being right, will grow.

FORCING VINES (W. F.).—Follow the instructions of Mr. Douglas in his "Hints" (you may have a aster. good). You may admit a little air at the top of the house, when the temperature rises to 60°, increasing the ventilation gradually as the heat increases, not permitting it to exceed 80°. During dull days you should raise the temperature to 60° by fire heat—that is, when the Vines are in full leaf. The greater the heat the more atmospheric moisture is required. When the Vines are in blossom the air should be drier than before, but not so dry. Such sorts as Black Hamburg usually set well without any artificial distribution of the pollen, but a gentle shake of the Vines can do no harm, and may possibly be beneficial.

PLANTING HYACINTHS, &c. (N. B.).—Hyacinths after being grown in water seldom flower the year following after having been planted out, but those which have been grown in pots are useful for flowering in the borders during after years. They do not, of course, produce spikes equal to those from newly-imported bulbs. In order to have them as good as possible the spikes should be cut immediately the flowers have faded, and the plants should be placed in a light place under glass and be watered regularly until the second or third signs of decay. Hyacinths are often much injured after flowering, either by being suddenly exposed to frost or by ceasing to apply water, so that the foliage cannot be properly matured. We are pleased to hear that you Roses afford you so much pleasure, and we shall be glad to say aid you can render in making our national flower still more popular.

WOOLLY INSECT (Mr. Llewellyn).—There was no insect in the box. Many of the white downy secretion, such as the common American Apple blight, the Larch leaf-miner, and the Beech-bark species. There are also several species which are found at the roots of various plants, as the Rhizobius Helianthemi on the Jerusalem Artichoke tubers; the Lactico-rhizobius Helianthemi on the Jerusalem Artichoke tubers; the Lactico-rhizobius species, Rhizobium Lactense, and several others. Whether the one which has injured the Anemone roots is identical with the one of the other species, we cannot determine without seeing specimens, but we should consider it most likely to prove a distinct species.—I. O. W.

SHOWING SEVILLE LONG-POD BEAN AND R. MACLEAN PEA (A Young Amateur).—The Beans should be sown the second week in April. The Pea should be sown sixteen weeks before the time required to be ready for use, the Beans about a week, but the waterer will make a difference of a week to ten days in the coming-in of the crops.

ASTERS FOR EXHIBITION IN AUGUST (Idem).—Sow the seed at the end of March or early in April in gentle heat, placing the plants on, and planting out at the close of May or early June.

PINE-APPLE MANAGEMENT (Eight-years Subscriber).—The treatment you are giving four plants is the correct one, and ought to cause the plants to show fruit shortly, they being in good condition. If they show in March you will be able to have the fruit ripe by the time required for exhibition.

ALTERNANTHERA (An Old Reader).—The plants should not be kept moist and encouraged to grow by an increase of temperature, potting them (if required) in equal parts of turfy loam and leaf soil or well-decayed manure. By a brisk moist heat you will insure growth for cuttings, which should be sown in a hotbed and grown-on, hardening well off before planting out in early June.

LOBELIA DEFIANCE AND LUCOPIPTON BROWN (Idem).—Any of the nurserymen advertising in our columns could supply them or procure them for you. We cannot recommend dealers.

RAISING BEDDING PLANTS FROM SEED (Kittie).—Phlox Drummondii will bloom for a long time, and is very fine for beds; Tagetes sicula's pinnata is a fine yellow; Ageratum Imperial Dwarf, lavender; Senecio elegans var. double crimson, lilac, purple, red, and white; the Seedling annuals, var. Verbenas may be had very good from seed and in decided colours, as scarlet, blue, and white; also Verbera venosa, purple, all of which require the treatment of half-hard annuals. Violas will also flower well if sown early. Helixwegii is too variable in colour for your purpose. Lobelia, Golden Feather Freyriana, and Petilla which you name, also crimson Beet, are suitable, in addition to which are Saponaria calabrica and var. alba, and Nasturtium King of Tom Thumbs, scarlet and golden. A hotbed is usually freely used in a week to ten days.

WINTER CHERRY, &c. (Idem).—Cut down the plants; they will root more freely than young plants. Give the *Dryopteris* specimens more liberal treatment, rich soil, and it will root in the winter. The *St. Paul* and *Liberal* for planting Gooseberries is 5 feet; 12 in. in poor soil, 6 feet in rich.

DESTROYING AMERICAN BLIGHT (A. D.).—With a fine brush paint the affected parts of the Apple trees with paraffin. It kills the blight and does not injure the trees. We had a choice tree in a pot, and ordered one of the men to apply paraffin to the affected parts; he did so most effectually by painting the tree all round, including the trunk, and the blight altogether. Injured in the least, the buds are all right, and there is now no trace of the woolly pest.

RAISING GLADIOLUS FROM SEEDS (L. H.).—Sow in March and place the pots or boxes in a hotbed. In two weeks the plants will be up, when a fair supply of air should be admitted to the frame. Entitle more freely as the plants attain strength, and by the end of May or June the light altogether water freely during summer, and when the leaves begin turning yellow withhold water gradually, and altogether when they are quite yellow. The bulbs at the end of the season will be found from the size of a pea to a good-sized filbert. They will nearly all flower the following year.

GLADIOLUS CULTURE (A Constant Reader).—No mention of locality is made, and a good deal depends on this as to the period of sowing. In the south of England the best period of the bloom is from August 15th to 25th. It should be recommended that the bulbs be left where they are, notwithstanding their signs of growing, until next month, and then be planted deep, say 6 inches, and gradually raised up to the surface of the soil, by means of a spade. Some kinds, such as Shakespeare and Adolphe Brogiati, are very early, and others, such as Phoenix, sate that they are useless for exhibition.—D. Deal.

CULTURE OF JUSTICIA CARNEA (Constant Subscriber).—As soon as cuttings can be obtained insert them in sandy soil and place in a brick moist heat, say 6 inches, and gradually raise up to the surface of the soil, by means of a spade in small pots in a compartment of loam, leaf soil, and peat, and replace in the frame until established. When in free growth stop the plants, and before the roots are matted report into 5-inch pots, placing the plants near the glass in a

stove. Stop the shoots again to induce bushy plants, and shift as soon as the roots show through the bottoms of the pots into pots 8 inches in diameter, using loam and decayed manure. After the middle of June the plants may be placed on ashes in a frame, keeping somewhat close. All the shoots may then be stopped again. The pots must be well drained, placing over the crown some flaky manure or moss to keep the drainage free. The soil must at no time become dry, and when the pots are filled with roots copious supplies of water will be necessary, giving weak liquid manure twice a week. Young plants should be established every year, destroying the old plants after cuttings have been struck. Frequent stoppings, good drainage, plenty of water, and a warm and moist atmosphere, are the essential points of culture to be attended to.

POTATOES FROM ONE POUND OF SEED (St. Edmunds).—Mr. Pink, gardener to Lord Sondes, Lees Court, Faversham, has grown 672 lbs. of Ereka from 1 lb. of seed. The seed tubers were cut into 121 sets, and were planted each yard apart on the 3rd of April in deeply-dug and well manured ground, in which the following compost had been incorporated—ten bushels of wood ashes, one bushel of soot, two bushels of caustic lime, and ten bushels of leaf soil; 4 lbs. of sulphate of ammonia, 6 lbs. of sulphate of soda, 19 lbs. of nitrate of soda, and 10 lbs. of sulphate of potash to twenty perches of ground. When in full growth the crop was top-dressed with 50 lbs. of superphosphate of lime. Each eye of a Potato was made to form a set. Send ten penny postage stamps to Mr. Pink, and he will return you a pamphlet on this fancy mode of Potato culture.

ROSES AGAINST BRICK WALL (Copper).—The white inflorescence from the mortar will not injure the Rose trees. It is salt-pest.

PEA HOBDELS.—J. A. and Others will send the sizes and prices of these were advertised.

SEVERAL VARIETIES OF CHERRY (C. G. R.).—Red: Leicester Red, Ivory's Nonesuch, Manchester Red, and for a dwarf sort Carter's Incomparable Crimson. White: Wright's Grove White, Veitch's Solid White, Dixon's Mammoth White, and for a dwarf grower Incomparable Dwarf White.

POULTRY BEE, AND PIGEON CHRONICLE.

POULTRY AND BIRD NEWS.

The whole of Mr. G. S. Sainsbury's far-famed Black East Indian Ducks have passed into the hands of Miss Brown, Chardleigh Green, Chard. The variety has lost an enthusiastic breeder, but we hope his great successes will follow the birds to their new home.

Mr. Cresswell and others sued the Committee of the Portsmouth Show the other week for their prize money, and we are glad to say obtained it. We wonder the President and his companions allowed the case to go into Court, for the result must have been certain, especially as they had so recently lost a similar case when sued by the Hon. and Rev. F. Dutton only a few weeks ago.

We mentioned the other day the illness of Mr. T. P. Edwards of Lyndhurst. We now learn that the whole of his stock of White-faced Black Polecats have passed into the hands of Mr. Norwood of Salisbury.

There is to be a Show of Poultry in the Winter Gardens, Bournemouth. We have a copy of the schedule. It seems almost a fac simile of the one issued by Weymouth in the summer, and we hope this Show may be as well managed and as great a success as was that. We doubt, however, the wisdom of the numerous chicken classes, as by the date of the Show many of the birds can be fourteen or fifteen months old, which will probably cause some confusion however sharp the Judge may be. The names of the Poultry and Pigeon Judges are not announced, but we understand they will be Messrs. Hewitt and Esquaint, while Mr. Billett will take the Pigeons. The schedule seems to be carefully drawn up and the prizes liberal. We have also a schedule from Nottingham, where the classes are arranged on the single-bird system. The prizes are good with a low entry fee, while most breeds are well provided for. We can find the name of no Judge announced, which we regret.

There is to be a "Great London and All-England Rabbit Exhibition," on April 18th and 19th. The Show is to be held in the Moutpelier Assembly Rooms, Walworth, and there are to be twelve cups awarded. As the prize money is, we understand, generous, we hope to see a large entry. The Secretary is Mr. Jennings, 88, Sumner Road, Peckham, S. E.

We hear there is a Langshan Club on foot, members of which may on election pay 2ls. or 10s. 6d. each as they choose, but only those paying the larger sum can be on the Committee. The enthusiasts who are trying to start this breed are Mr. Nunn of The Lodge, Barton, Cambridge, and Major Cread of the Manor House, Durrington, Worting. We understand two dozen or more gentlemen have already joined this proposed Association.

The Wild Fowl Preservation Act, 1876, came into force last week, which protects Woodcocks, Widgeon, Teal, Snipe, Plover, Wild Ducks, Wild Geese, Curlews, Searkars, Sandpipers, Godwits, Greenshanks, Ruffs, Shovellers, Stonehatch, Spoonbills, Dunlins, &c. The Blackcap was seen on February 2nd in Surey, which is an early date for the arrival of this migratory bird.

A periodical sale of Poultry, Chickens, Dogs, &c., has been opened in South London. The mart is in Bysson Road, Cam-

berwell, and the auctioneer is Mr. Such. We should think fanciers in that neighbourhood will find this a useful means of sale, situated as the rooms are in so densely populated a part. The first sale was well attended.—W.

AQUARIUM POULTRY SHOW.

Among all the modern improvements for giving enjoyment to man, the now fashionable Winter Gardens rank high. It certainly is pleasing to find shelter from the open parks on windy days in a well warmed garden under glass, where strains of popular music are heard, and the exquisite odours of spring flowers and the colouring of varied and ornamental stove foliage plants mingle pleasantly and kindly for our gratification. This week is added to those charms in the Winter Garden at Westminster a poultry and Pigeon Exhibition for the United Kingdom. From Ireland, Scotland, and Wales; from the busy towns of Birmingham, Manchester, and Liverpool; from quiet country homes in inaccessible districts, came in the baskets on Monday evening, succeeded by their owners on Tuesday morning to enjoy the well-ordered *menu* of Messrs. Cotton & Custance. It is difficult to arrange for a show on so large a scale, and this must account for the spare entries in many classes; and again, many have by now had their eyes opened, and having learnt the locale of most winning specimens perhaps dreaded the *recherche* of Bristol, Birmingham, and Wolverhampton awards, among which their own birds may not have found places, and so kept their birds at home. The quality, however, embraces most of the choicest winners extant; and fashionable London, already domiciled for the season, has had an opportunity, amid the odours of hyacinths and the bright colours of tulips, of seeing a poultry show under exceptionally good circumstances. The Pigeons alone were well worth a visit. On Tuesday the arrangements seemed very much behindhand, and the cards were not up on many pens when we left at 8 p.m. We understand, however, that Mr. Bilet and his staff only got into the hall on Monday evening, as a concert was being held, consequently the work must have been severe; anyhow, at 3 p.m. Pigeons and poultry were without water and food, and cocks back to back were fighting between the bars of the pens. This seemed bad, but matters gradually improved as the afternoon wore on. We still, however, say the cards should have been put on far more promptly, for several fanciers from distant counties went home again quite ignorant as to what their birds had done. The greater part of our report for this reason we must defer until next week, only giving now a few particulars. The two Dorking cups went to Mr. Parlett's Coloured cock, and to Mr. Cresswell's Whites. Mr. Proctor won the Cochin cup with a good Buff hen. Spanish and Poland were magnificent, Mr. Finchwood again pulling-off the Poland cup with his Blacks. French were poor, save for the Houdan hens of Mr. Vallance and the first Crève cock. Brahmas were moderate, Hamburgs excellent, and the Bantams too were good. Among them we noticed a superb pen of White Rosecombs, as good a pair as we have seen for a long time. The Waterfowl were a fair collection, the Rouen Ducks bring especially fine.—W.

THE PIGEONS.

Poultry and Pigeons at an aquarium; well, this is indeed strange! Birds and fish, they don't even come on the table together! I have seen poultry and Pigeons in a drill hall; right enough, too, for Game cocks are the best of volunteer fighters, and among Pigeons there are always Trumpeters. I have seen Pigeons in a palace over and over again; right, too, for the Carrier is, we all know, king of Pigeons. I have seen them also in a tent on the green sward at our summer shows, and the green grass and the Dorkings seemed to suit each other, both being a country look; but I certainly never expected to see birds at an aquarium. It has all together a fishy look.

Now, for the sake of our winter readers, and as the Aquarium is a new place, let me say what it is like. It is a sort of smaller Crystal Palace, a cross between that and the Bethnal Green Museum—not all glass, but brick walls, with a glass arch above, galleries round, shops in parts, and the fish in tanks ranged round the walls, and you see them through the plate-glass side near you. The Aquarium is most easy to get at—no journey out after London is reached. It is within the shadow of the old Abbey of Westminster, Houses of Parliament close by, and the boom of Big Ben is heard as one walks under the glass. It is a London abode, then—actual real London. The day—Tuesday—is, for this soppy dreary winter, quite a respectable day. It does not rain (mark that in your pocket-books), and there is a very old, almost forgotten, acquaintance called the sun actually out, and showing a half-assured but still a shining face.

Next for a good humoured rumble. Everything is sadly behindhand. It seems there was a concert the last night, and the birds were not staged till this morning, and at two o'clock never a card up. I leave then darkness comes, and yet the cards, notably upon the Carriers, Barbs, and Jacobins, not yet up, and no prize list until to-morrow. Hence I must say something about the Show this week and more next. There must

not be such hurry-scurry another year; bad for birds, exhibitors, judges, and reporters. There are over a thousand Pigeons to eight hundred fowls.—Pigeons for news, London and Lindons. Perhaps the Aquarium is the best place yet for a show; the light is perfect, the glassy arch high, but not too high. Another time there must not be pen above pen. With this exception the arrangement is all right, and rows down but not across at the ends is good. Next week I shall hope to go through class after class. Now, only to speak generally, the White Pouters perhaps were a head of the other classes. The Carriers grand, and one Black cock beyond in wattle anything ever before seen. Dragons most numerous and excellent. Of Tumblers the Short-faced, not being Almonds, very superior. Flying Tumblers a capital lot. Jacobins some wondrously long-feathered birds; long in chain, across I mean. Magpies are rapidly rising into great and deserved favour. Here I leave this pretty show for the present; pretty, indeed, as viewed from the galleries, whence a bird-eye view of the birds; but too far for a general and most telling peep.—WILTSIRE RECORDER.

[The awards (although the judging commenced on Tuesday) were not forthcoming at the time of our going to press.]

NORTHAMPTON SHOW OF POULTRY, &c.

The eighth annual Show was held on the 14th and 15th inst., under the management of a new Committee of the newly formed Columbian Society. The entries were good, and the whole placed under the management of Mr. Edge of Birmingham. Mr. Hewitt judged the whole of the poultry, which was no easy task.

Dorkings headed the list, and there were fair classes. The first-prize cockerel very good, but evidently overdone, as his tail fell to one side. In the other colours of Dorkings Silver-Greys and Whites divided the prizes. *Cochins* were very good classes, the Buffs by far the best; but *Brahmas* were to some extent a failure in quality. *French* were very good classes, and in cocks, with one exception, the best were Houdans; but not so in hens, for here were some capital Crèves. *Spanish*, which seem to get a push from this quarter, were very good, the cocks especially fine in face. *Gams*, with here and there a good bird, were a bad lot. *Hamburghs* very good, Gold-angles taking the lead in quality as well as numbers. *Silver-angled* cocks were good as far as the winners went, but the rest only moderate. Hens a good lot. *Pencils* were mixed classes, Silvers taking the lead in both cases, these being by far the best. Blacks were good classes, and very well placed. In *Polish* the entries were uncommonly large. In cocks a Silver was first and Gold second, with a Silver third, many others well deserving a position; and in hens a grand Silver was first, two capital Golds coming in for second and third. Some good Malay cocks were shown in the Variety class; but the second position was awarded to a so-called Loughan. In hens a smart Sultan was first, Malay second, and Minorca third. The Selling classes were rather extensive, and there were some good birds shown in them. *Game Bantams* were not so good as we expected to find them. In the two Variety classes, Sebrights won all the prizes. The entries were upwards of 550.

Pigeons had 450 entries, of which Mr. Gresham judged the Pouters, Mr. Hutton the Selling classes, and Mr. Tegetmeier all the rest. Pouters, White, cocks.—First the Lowestoft winner, clear of the rest, which, however, were very good. Hens a good lot, and the competition close. Any other colour.—First a grand Blue; second a Red, large in crop but thick in girth; third a small smart Black. Hens.—First a Blue and also the second, the third a Red; a fair lot. Carriers had three classes. First in cocks was a Dun; the third, a Dun, we liked quite as well as the second-prize Black. Hens.—First a Black, rather of a light type; second and third were Dun and Black of heavier build. Barbs were mostly noticed, and were very good in both classes. Tumblers.—First a grand Agate, second and third Almonds. Tumblers, Long-eared, were first a Red Bald, second a Rosewing, and third a Yellow Mottle. Foursign Owls were good, and the local birds took the lead; first and second White, and third Blue. English Owls were very good, indeed one Blue cock that was put second was in our opinion about perfect as a Blue. Turbits, with a few exceptions, were not very first-rate. Dragons had three classes, eight out of the nine prizes going to one lot. Jacobins were uncommonly good in all classes. There were several Selling classes, which were well filled.

The *Rabbits* were judged by Mr. Hutton, as also the Cats. Of the former there were 173 in eight classes. The Lops were a very good class; first a Sooty Fawn, 23 by 5, a grand one in all points; second a Fawn-and-white, 21½ by 5, good in all points but smaller; third a Sooty Fawn Duck, large and very pendant in ear, 22 by 4½, several others coming close in measurement. Angoras were also good, the first large and full of very fine wool; second smaller, but also fine in wool; the third losing very little. Many good ones were sadly mated. Himalayans were not a good lot, only the first being of high merit, and this had been bit on the nose, and showed the scar very pro-

THE ADVANCE OF BEE CULTURE.

"B. & W." seems to lament that we have not added much to our knowledge of bee life since the time of Huber. Patience, friend "B. & W.," there is a race of bee-keepers growing up to knowledge who yet will add a few facts to Huber's store, thanks to frame hives and not least to the British Bee-keepers' Association, who, by their great and interesting shows, have done so much to make known modern hives and appliances. There is no gainsaying the fact that during the three years of the Association's existence bee-keeping and interest in the bee has vastly multiplied. Following the metropolitan example, bee hives and honey shows were last year held and associations established at Weston-super-Mare, Worcester, Exeter, Glasgow, Wolverhampton, Grantham, Huntley, Sherborne, Odham, &c., in addition to which the classes for honey were greatly increased at rural horticultural shows; but while the children are in their lusty infancy the parent languishes for want of more members and funds following. I feel sure this has only to be widely made known and help will come, for there wants but a small percentage of the many thousands who have visited the Crystal Palace and Alexandra Palace shows to become members of the Association, and the Committee will be stimulated to grander works in the future. The Association in their shows have never failed in making a profit; entrance fees were always nominal, never more than 1s., and nothing to cottagers. All the officers have worked for love. The prizes and expenses of each show amount to about £160, to which the 250 members' subscriptions, mostly 5s. each, go but a small way. The result has been the Committee have had each year to go round with the hat to make both ends meet, and I fear the same means must be adopted this year to create a prize list. Now let me ask bee-keepers who read my appeal to further the good work by joining the Association without delay. The amount of subscription is optional, need not be more than 5s. per annum, and I shall be happy to give any desired information on the subject.—JOHN HUNTER, *Eaton Rise, Ealing.*

STRAW VERSUS STEWARTON HIVES.

I NOTICE in the letter by "A RENFREWSHIRE BEE-KEEPER" in the Journal of February 1st an answer to Mr. Lowe's inquiry, whether it is the form, material, or construction of the Stewarton hive which enable it to outdo the straw hive. He says that the straw hive in question is the usual dome-shaped, but he does not state what size it was, and which I take to mean the common small round-topped hive which Mr. Pettigrew is doing his best to get replaced by larger hives, the small hives being next to worthless.

I do not consider it quite fair of the "RENFREWSHIRE BEE-KEEPER" to put one of the sort of hive I mean against the Stewarton for comparison, and then publish the difference—viz., "Straw v. Stewarton;" because in my opinion, if it had been an 18-inch Pettigrew straw hive, under the same circumstances it would have shown a very different result, both in breeding more bees to work and gather honey, and having somewhere to put it when it was gathered, for, as a rule, if there is no honey to be had the bees will leave it; and also an 18-inch Pettigrew hive will hold large supers on the top of almost any kind without any fear of them falling off, and there is a large hole on the top ready made for supering.

Next, the super used being of glass made the result of the straw hive still worse; whereas if it had been a hive that would have held a straw or wood super it is very probable that there would have been much more honey stored in it, and not so much would have been consumed in comb-building.

If the "RENFREWSHIRE BEE-KEEPER" would this next season try an 18-inch Pettigrew straw hive against the Stewarton, both equal in health and strength and under the same circumstances, without partiality to either, and then publish the results in the Journal, he would give valuable assistance to bee-keepers in general.

I reared my bees last autumn to five good hives, all of Pettigrew's style. Two of these succumbed to the long cold weather at the beginning of the year, and two I had promised to friends before I lost the others, and therefore I was left with 18-inch hives. My garden is bounded on one side by large ironworks, coke ovens, &c., and the other sides are dotted over with pits and other works, so that my bees have only about one-half the ground to work on that most bees have, and that at some distance off. They had to be fed until the middle of June to keep them alive, and then the weather was grand for them, and they gained in weight and numbers rapidly. They were ready to swarm about the first week in July; but the clover was coming into flower just then, and the weather so good I wanted to keep them in a short time longer, so I put an eke under and a super on the top to hold about 5 lbs., more to prevent them swarming than for filling. About a week after they were so full and the weather so hot I dare trust them no longer, and I expected finding they had gone when I returned home from work every night.

I took the straw super off full on the Saturday afternoon,

then I weighed the hive, &c.; it was 82 lbs. I had a splendid first swarm at night, 7 lbs. good weight, with plenty of bees left in the stock. About ten days after I took a second swarm out, successfully as I thought, when I left them at night; but in the morning there was a nice mess, there had been an accident. Through the weather being so hot it had made the combs very soft, and some honeycombs had fallen down after I left them, the cross-sticks cutting it in pieces as it fell, and all the remaining bees were on the board and out on the front of the hive half drowned in honey. I did what I could for them, and put all I could to the second swarm; but bees when covered with honey cannot clean themselves, and will not stay in the hive, and they were creeping about in all directions, but there was no helping it. It was at the very least 20 lbs. out of my way, besides the loss of a good turn-out. I took 21 lbs. of honey out of it and the 5 lb. super.

The first swarm of 7 lbs. weight of bees were put into an 18-inch Pettigrew hive, and this they filled with combs in eight days after. I therefore put a straw super on it, and in three weeks from putting them in took the super off full and a virgin swarm out of it of 6 lbs. weight, which were put into an 18-inch Pettigrew hive, and fed them for the winter, and three weeks after that I turned the remainder out a good turn-out, and put it into a 16-inch Pettigrew hive full of new combs and fed them for the winter. I took a 5-lb. super and 29 lbs. of honey equal to super honey, all stored in the first three weeks (the weather broke up after), beside filling the hive and super with combs. In all I obtained over 60 lbs. of the finest honey from the stock and its swarms, which in my locality I think no other sort of hive would have beaten. It speaks very well for large straw hives in a poor place, so what will they not do in a good place? and while they do so well with me I can do nothing else but recommend them. They are the cheapest sort of hives for the working man, and answer all the purposes he wants with them. I introduced them to several of my friends last summer, who are now using them, and also the artificial swarming principle.

I try to get as much honey in the hive as I can, because run honey is the sort wanted here, and supers have to be run the same. I sold about 56 lbs. at 1s. 6d. per lb., and if there had been more to dispose of it would have gone at the same price.—P. RAINFORD, *Wigan.*

THE BATTLE OF THE HIVES.

SINCE penning a few remarks under the above heading we have been favoured with two papers by "A RENFREWSHIRE BEE-KEEPER." In the article of 1st February I am reminded of a former controversy on the same subject carried on in this Journal in the beginning of 1873, in which I with other well-known bee-keepers took part, and I am informed for my comfort that my views when then enunciated were considered so latitudinarian and theoretic by the fraternity, "that little support" was accorded to them.

In looking into the Journal of that date I find a keen controversy was being waged on this same question, and with the view of settling it various competitive tests were proposed as between the respective hives named, but very properly no such competition ever came off. On the 27th February of the above year (1873) I wrote an article on the question at issue, in which I very fully made known my views upon the whole subject, and conclusively showed, I think, so far as amount of stores was concerned, that though all the best hives named were engaged in such a contest, a common box taken from a tea warehouse (however ludicrous) might be the winner.

Let us see, therefore, from the following quotations how far "A RENFREWSHIRE BEE-KEEPER" is justified in saying that my views received "little support from the fraternity."

Mr. Abbott writes: "I entirely deny that any merit is due to any class or variety of hive, as a means in itself of acquiring honey." Mr. R. Symington said: "I had a good laugh over Mr. Lowe's fancied contest, and the championing of the tea-chest. There is no doubt as to the result that will follow. That the hive itself, be it straw, wood, or a combination of both, with movable combs or without, round, octagon, or square, has a direct influence upon the net result of honey to be obtained in one season, I for one do not believe." Mr. S. Bevan Fox is the only one who gave forth a dubious utterance. He writes: "I cannot say that I have much confidence in the infallibility of Mr. Lowe's judgment." Then, in summing-up, your excellent correspondent, "B. & W.," thus gives his opinion: "Mr. Lowe's valuable monograph on the subject, happily corroborative of my own opinion, puts the question in its true light," and thus the "best hive controversy" of 1873 was summarily dismissed. On these quotations I make no comment, they speak for themselves.

I do not now revert to the test case of the contest of the straw and the Stewarton—mentioned in the "RENFREWSHIRE BEE-KEEPER'S" garden as narrated in a previous article, but which is more fully explained in his paper of 1st February. By this explanation we have additional light thrown upon the case, and consequently

are enabled more fully to understand not only its character, but also in some measure its results. This explanation is vouchsafed in answer to my query, "Is it by reason of the form, material, or construction of the Stewarton hive which enabled it to eclipse so greatly the straw skep in amassing stores?" The reply of your correspondent is, "I answer in the affirmative. . . . This 'form' the straw hive being the usual dome shape, prevented any super sitting conveniently on it, saving the Abnegon glass, and even to get it placed I had to cut out a portion of the apex with my pen-knife and lashed the glass with cord to the protruding cross-sticks. Then the material of the upper portion of that hive being glass told much against the return. . . . I have heard it estimated by experienced bee keepers in glass-filling that their bees would readily store from 3 to 4 lbs. of honey in wood for every one in glass, and, to crown all, the extra breeding and supering area in the Stewarton over the straw must alike have stimulated the fertility of the queen and the acquisitive principle in the ever-increasing band of her more numerous staff of honey-gatherers."

Now this explanation reveals two things: First, there was no attempt whatever to ascertain the respective merits of the two *hives qua hives* for obtaining honey irrespective of system, a point necessarily implied in this controversy; second, the professed object of the test referred to was to ascertain the merits of the straw and Stewarton on the depriving system, and hence can have no bearing on the question at issue. This being the case we might pass at once for any consideration of it, but even in this light it is unsatisfactory.

"To fairly compare results one hive with another," says "A RENFRESHIRE BEE-KEEPER," "it is obvious that they meet upon a common field." Granted; but there is another equally obvious condition—they must both be treated fairly and alike according to the system adopted. Now, were these two hives in his garden fair representatives of those in dispute between Mr. Pettigrew and himself? and second, was the same system as adopted by him with the Stewarton carried out in all its entirety and fairly with the straw? Let us see. The Stewarton, we presume, was of the form, size, and material considered best by him. The straw, however, was not a straw *à la* Pettigrew, and certainly it has little affinity except in material to the flat-topped modern straw hives in my own apiary and locality. I had no idea that so advanced an apiarian as "A RENFRESHIRE BEE-KEEPER" would have such an antiquated piece of furniture in his apiary; and yet with this dome-shaped antiquated hive, never intended, and having no facilities for supering or working-out the depriving system, we are asked to believe the Stewarton and it were "well matched." There is an ill and appropriate saying with which your correspondent will, I doubt not, be familiar, that "we cannot take the breeze off a Highlandman;" so surely as little can we take a super off a dome-shaped hive. We are told that with all the cutting and carving on the upper portion of the hive, resulting only in a certain aperture being obtained, over which a glass globe of the Abnegon type was lashed with cords to keep it up, and this, too, with the admitted knowledge, as stated, that for every pound of honey stored in this receptacle lashed over the straw, 2 to 4 lbs. would be stored in the wooden super surmounting the Stewarton, and "to crown all" the poor straw laboured under the disadvantage of lack of breeding space below and storage room above. Yet notwithstanding all these drawbacks, this same straw, *mirabile dictu!* stored about 22 lbs. of honey in the glass super, being fully above the quantity which, according to the above estimate, the Stewarton hive itself would have stored had a glass super, in equal fairness, been placed over it instead of a wooden one. The Stewarton, however, was stored below as well, while the straw, curiously enough, was at starvation point; but your correspondent accounts for this "to want of breeding space," which is another unequal condition to which the straw was subjected.

But it is needless to pursue the subject further. Whatever may have been the real cause of the difference in honey results in this particular case, it cannot for a moment be supposed that it was in virtue of the one domicile being of straw and the other of wood.

"A RENFRESHIRE BEE-KEEPER" remarks, that if certain other gentlemen and myself were "more practical," we would see matters in another light. For myself, I will only say if experience and practice could give knowledge I should have a little, and it is because of that experience and knowledge that I have presumed to enunciate my views on this question so unhesitatingly. It has always been my habit, whether in elucidating the natural history of the bee or dealing with the more practical work of the apiary, to form opinions and test principles for myself, and in imitation of Huber, the prince of apiarists, to take nothing for granted which we have the means of subjecting through the crucible of close observation and rigid experiment.

Our common object must certainly be the advancement of sound knowledge in this, as in all other points. In speaking of the different kinds of hives we must do so fairly by all; and it was only when I noticed that our old friend the straw hive (I do

not mean the antiquated dome-shaped of your correspondent, but the straw now generally in use) was being so abused and caricatured as well as to its size and form as to its entire unsuitability to all the ordinary operations of the apiary, and above all as to its necessary connection with the sulphur pit, I did not hesitate to repudiate these disparaging opinions regarding our old friend.

"A RENFRESHIRE BEE-KEEPER" remarks at the conclusion of one of his articles as to his observatory as a kind of hive not suitable for storing honey; I quite agree with him. Such glass or unclothed hives were never intended for such a purpose. They are constructed not for the ordinary purposes of the apiary, but for specific objects—for study, experiment, or pleasure, and therefore do not come within the scope of my arguments nor of any other writer on this question.

That "no such adventitious circumstance as the kind of hive alluded to, wood or straw, can have much or any influence on the amount of stores collected by the bees," is a statement supported by such eminent apiarian writers as Dr. Bevan, Golding, Dunbar, Jardine, Langstroth, Hoish, and Taylor, and many others I might name.—J. Lowe.

OUR LETTER BOX.

VERTIGO (E. R. T.)—It is usually caused by pressure of blood on the brain. The excitement produced by being exhibited would cause it. A tablespoonful of castor oil and a supply of lettuce leaves is the best preventive and remedy.

GLASS FLOWERS (C. S.)—Apply to Messrs. Carter or to Messrs. Sutton, and tell them the size of your ground and kind of soil. Letting chickens out depends up on the weather more than their age. Do not let them out before mid-day unless the mornings are fine.

CANARIES DYING (G. P. H.)—They were not killed by the *Cedrus deodora* buds. The birds cast as we think were cramped, probably from exposure to cold winds.

STEWARTON HIVE (F. J.)—The Stewarton hive is quite dissimilar from the Carr Stewarton, the former being an octagon, the latter a square hive. The Stewarton hive is usually wrought to a depth of 18 inches breeding space—at least, my boxes are 7 inches deep. Two at 9 inches might do as well. Mine are made by James Aliso, cabinet maker, Stewarton, Ayrshire, Scotland, who will supply with bars or frames as required. Honey boxes are but 4 inches deep with seven bars 11 inch wide, all moveable—to all intents and purposes sectional. My colonies are protected by light-wooded moveable covers, top also moveable. The hive is usually wrought with three breeding boxes, and the lowermost removed for winter when vacated by bees. Boxes could be carried cheaply from Ayrshire to Cuck vid Greenock steamer, and I find they had much cheaper from thence than local tradesmen will make them. To 18 inches breeding space, with best colonies, I find it necessary in good seasons to add as many as sixteen supers at one time to keep all honey gatherers at full work, or a total depth of 45 inches. The Carr hive is a smaller, more fanciful net idea.—A RENFRESHIRE BEE-KEEPER.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 33' 41" N.; Long. 0° 9' 0" W.; Altitude, 111 feet.

DATE	9 A. M.			IN THE DAY.				Rain.		
	Baromet. at top of barometer.	Hygromer.	Direction of Wind.	Temp. of Air at 5 feet.	Shade Temperature.	Radiation Temperature.	sun.		on glass.	
1877.		Dry.	Wet.	W.	deg.	deg.	deg.	deg.	In.	
Feb.				N.	deg.	deg.	deg.	deg.		
We. 14.	29.97	51.4	49.	W.	45.3	54.4	43.6	63.9	44.8	
Th. 15.	29.98	49.8	48.1	S.	46.0	52.0	46.2	61.8	42.4	0.067
Fr. 16.	29.78	47.7	58.7	N.	45.5	43.7	39.3	51.1	37.3	
Sat. 17.	29.98	51.5	46.8	N.W.	45.2	49.9	37.4	55.0	39.8	0.013
Sun. 18.	31.074	41.8	43.8	W.	43.9	49.1	39.0	64.9	34.5	0.183
Mo. 19.	29.94	41.6	4.4	N.W.	44.7	47.7	39.7	61.5	37.0	0.830
Tu. 20.	29.144	31.9	54.8	N.	42.8	45.8	34.9	53.8	38.7	0.667
Means.	29.835	43.7	42.2		44.1	49.7	40.0	75.7	37.6	0.693

REMARKS.

- 14th.—Rain in forenoon; afternoon and evening fair but dull.
 15th.—Fair all day but dull; very little sun.
 16th.—Rain in the early morning, but followed by a beautiful day.
 17th.—Very fine all day but cold.
 18th.—Fine but cold all the forenoon; rain commenced about 1 P.M., and continued at intervals all day.
 19th.—Fair though cold all the fore part of the day; very dark at 4.15 P.M., when snow and soft sleet fell; heavy rain at night. A very rapid and sudden fall in the barometer between 9 P.M. and midnight, and the wind very high.
 20th.—Much rain and high wind in the night and early morning, with snow, followed by a very bright sunny day.

About 5° colder than last week. The most remarkable feature was the arrival on the 19th of a sharp storm of wind, agreeing remarkably with the telegraphic warning sent several days before from New York.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 21.

Business has again been flat and prices barely maintained. No alteration to quote.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 1-7, 1877.	Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	h. m.	h. m.	h. m.	h. m.	Dava.	m. a.		
1	TR	Royal Society at 8.30 P.M.	47.6	35.5	4.6	6 47	5 28	8 25	7 12	16	13 81	60
2	F	Sale of Orchids at Leyton.	48.8	34.8	4.5	6 44	5 40	9 1	7 24	17	13 18	61
3	S	Royal Institution at 8 P.M.	49.7	31.9	4.3	6 42	5 43	11 15	7 38	18	13 5	62
4	SCN	3 SUNDAY IN LENT.	49.6	31.0	4.3	6 40	5 44	morn.	7 55	19	11 59	63
5	M	London Institution at 5 P.M.	48.7	31.6	4.1	6 38	5 45	0 38	8 17	20	11 34	64
6	TC	Zoological Society at 8.30 P.M.	48.7	30.0	3.3	6 36	5 47	1 56	8 48	(	11 24	65
7	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	49.3	32.4	3.9	6 34	5 49	3 4	8 29	22	11 9	66

From observations taken near London during forty-three years, the average day temperature of the week is 48.8°; and its night temperature 32.1°.

FLORIST FLOWERS RAISED FROM SEED.

U NQUESTIONABLY the most important, expensive, and indispensable of flower seeds are those of the plants under notice. No other class causes when inferior so much disappointment, none affords greater satisfaction when superior. Only the best strains are worth growing. Such being the result of much care and forethought—the very best examples in habit of plant with flowers of great size, fine form, great substance, and well-defined colour being selected for seeding, they are not low-priced; in fact I invariably find that a packet of seed of a valuable strain contains but few seeds, causing occasionally perhaps a feeling of disappointment at having so little for the money expended; whilst a lot of seed, whatever satisfaction may be afforded at sowing time, is to my mind suggestive of proportionate annoyance at flowering time. Economy in seeds is not found in cheap articles.

Florist flowers from seed are noticeable for, as compared with named varieties, possessing robustness of growth, dwarfness of habit, and vigorous constitution, combined with a diversity of colour and superior flowers. In brief, to such a standard of excellence has the seed of florist flowers attained, that for general decorative purposes plants so raised are much superior to named varieties continued by cuttings or other modes of propagation. I do not, of course, intend these remarks to apply to such plants as Anriuela, Carnation, &c., grown for exhibition, but I do submit that for a majority of cultivators and general purpose many (and I shall only mention such as are reliable) plants had from seed are hardier in constitution and more floriferous in character than are named kinds which are raised by other means.

Primula sinensis, or Chinese Primrose, is the first demanding notice. The strains of Primulas are now so good, so certain of coming true to character from seed, that no one cares to treat the plants other than as annuals. The plants are distinguished by dwarf robust habit and amplitude of firm-textured, rather deeply-indented leaves, large trusses of flowers borne above the foliage, but not so high as to be straggling; the flowers remarkable for their brightness and intensity of colour, clear eye, large size, great substance, and exquisite fringing. The flowers are not meritorious if under ordinary cultivation they are not 2 inches in diameter. I have a decided dislike to those forms which have a disposition to produce the flowers in whorls. They have a loose straggling appearance, anything but the compactness and firmness of those exhibiting their flowers in a ball-ball.

The varieties are rather numerous. *P. sinensis fimbriata rubra*, purplish red or crimson, and sulphur eye; and *P. sinensis fimbriata alba* are, when the strain is good, unsurpassed; but I also appreciate their varieties following, which are very fine—viz., Florence, scarlet, shaded red; kermesina splendens, bright rosy carmine; Cottage Maid white, striped and spotted carmine; striatiflora,

very like the last, but striped and splashed deep rose; punctata elegantissima, crimson, of great velvety substance, marked with small white dots, and perfect in fringing; and *hincina marginata*, rosy lilac, margined white. All have finely-fringed flowers, and are indispensable for effect where variety is sought for. Russell's Pyramid Red and White are remarkable for having the flowers in a pyramid and throwing them well above the foliage; and the Fern-leaved (*P. filicifolia alba* and *rubra*) are amply furnished with foliage; but the flowers of the last four are not worth much in comparison with those preceding.

I would particularly note the great value of Double Primulas which are now raised from seed. I have some so large and double as to be taken for named varieties, only the greater vigour of plants and their floriferous character soon dispel any such assumption. The colours are white, purplish crimson—the old colour of *P. sinensis fimbriata rubra*; double kermesina splendens (Prince Arthur), carmine crimson; and Double Florence (Prince of Wales), scarlet, shaded red. The doubles often produce their flowers in whorls, giving a pyramidal aspect, and have longer stalks than the singles, hence every pip is available for cutting, otherwise I look upon the whorl tendency as a disadvantage, though there is no denying the beauty of the pyramidal form for table purposes. The doubles are more enduring in a cut state than the singles. A greenhouse without its Primulas deprives its owner of the finest of all dwarf autumn, winter, and spring ornaments.

It is usual to sow at various times for different seasons of bloom, but, except for spring bloom, I consider one sowing sufficient—namely, the early part of April. The pots being well drained and filled to within half an inch of the rim with turfy loam, and decayed manure (reduced to soil by exposure for a considerable time) in equal parts, and a little silver sand, watering the pots before sowing the seed. The seeds are only just or barely covered with very fine soil. The pots are placed in a hotbed—a Cucumber or Melon frame, and kept shaded. The seedlings will be up in ten days to a fortnight, and must be kept shaded, and they are better rather dry than wet, as when the soil is made very wet the plants damp off; also ventilate freely to ensure sturdy growth. Pot-off singly in small pots and return to a frame—a cold one will answer, only keep it close and shaded, but be careful not to overwater or keep so close as to induce damping. After a few days the plants will be established, and should have moderate ventilation and shade throughout the summer. A tiffany or scrim canvas (fine) shading is suitable. The plants are sprinkled overhead every afternoon, and in this way watering is done; but if the weather be dull and the plants not requiring water it is omitted.

The plants are shifted into larger pots as required, which is when they fill with roots, assorting the plants into sizes after they are brought to the potting bench for the final shift, which will be required early in July. The strongest plants have 8-inch pots, the next size 7-inch, and the smallest 6-inch pots. The drainage is thorough,

and the compost used consists of turfy loam and manure reduced to soil in equal parts, with a sixth part each of silver sand and charcoal broken up rather small. The plants are afforded room for development by placing them thinly on ashes in a cold frame, and are duly attended to with water, avoiding overwatering; the trusses appearing before September are removed with a pair of scissors, and at the end of that month a light airy position is given the plants in any house having a greenhouse temperature—viz., 40° to 45° from fire heat. Liquid manure is given at every alternate watering after the pots fill with roots. The plants flower from October until April.

For late spring flowering the seed may be sown in heat in June, growing the plants on in cold frames until October, when the plants should be shifted into their blooming pots, if not already done in September, which is preferable. They require to be very carefully watered and never overhead after the weather becomes dull and wet; say from September to April inclusive, and being careful not to pour the water upon the collar of the plant. The trusses should be removed up to the middle of February for an April bloom, or to within six weeks of when the flowers are required. After the plants have ceased flowering in the greenhouse they will, if they are kept from frost and the spent trusses and old leaves are removed, flower grandly in August onwards if planted out at the end of May or early June in rich light soil, preferably a vegetable one, in a slightly shaded situation. The plants, however, are not worth keeping for a second bloom in pots; young plants are very superior.

CINERARIAS.—These must be of dwarf branching habit, robust and healthy in constitution, and if the strain be good the flowers will surpass in form, size, and colour named varieties. The flowers under ordinary cultivation will not be less than 1½ inch in diameter, and these will have a much better effect than a great umbel of clustered small flowers as starchy and ragged as a wild Daisy. From a well-sorted packet of Cineraria seed we may calculate upon at least half a dozen distinct colours in the progeny—the highest number I have known being ten—and when this is the case the grower may indeed consider himself fortunate, for in not a few instances a majority of the seedlings are selfs, and what is remarkable, blue; indeed I have myself had nothing else at times from a packet of seed. The plants affording blue flowers are when in a small state readily distinguishable by their superlative robustness and the blue tint of their leaves, especially the under side and footstalks. Only the number desired of that colour should be selected from the seedlings. Plants which are weakest in their young state almost invariably afford the best flowers in size, form, and colour.

A word as to double Cinerarias. They must be very different to any I have had to compare favourably with the single. The flowers are too small in size, the petals too narrow and not numerous enough to come up to what we expect of a double flower; indeed the extra internal petals, which constitute anything rather than doubleness, and to which the flower is indebted for its title, detract from rather than add to its beauty. "Blindness" is sometimes alluded to as a defect in Cinerarias, notably of the double. Now I do not remember to have had a plant without florets of some kind, but I have had quite my share of plants the petals which might as well for any good they were never have appeared—in fact some of them, as if aware of their inferiority, could hardly show themselves beyond the calyx. These flowers will unfortunately seed just as freely or more so than those with petals three-quarters of an inch long, and it is the saving of seed from such paled plants that is productive of so much annoyance.

There has been of late a growing disposition to look upon Cinerarias with doubt, it being alleged the progeny were degenerate, and recourse would again have to be had to cutting or offset propagation from named varieties. Such is not consonant with my experience, and will not, I think, be found that of those who will take the trouble to select the best plants and flowers only for seeding. I have known all the best flowers cut by the flower-gatherer, and what flowers were left expected to furnish seed and ultimately plants with flowers equalling them in time to come. No wonder the result is so much blindness and disappointment; but when the best plants and flowers only are selected for seeding I have invariably found that the offspring is marked by, in a majority of cases, superiority. Seed of such will be limited in quantity, and command a relatively higher value than that collected from

plants indiscriminately. There is no plant but what under superior cultivation and selection from for seeding in its best form will exhibit in the progeny decided advancement. Seed of most plants is best when saved by those devoting their care and forethought to some particular class of flower.

In raising plants to flower in winter I sow the seed in April in pans well drained, and filled to within a quarter of an inch of the rim with a compost of three parts turfy loam and one-third of leaf soil or thoroughly decayed manure. The surface is covered with a little fine soil and made level; a gentle watering is given before sowing, and the seed is sprinkled very lightly with fine soil. The seed pans are placed in gentle heat or a hotbed, and kept moist, taking care not to sodden the soil nor allow it to become very dry. The seedlings appear in ten days to a fortnight, and are then kept moist, shaded from bright sun, near the glass, and well ventilated. They are potted-off singly into 3-inch pots when they have a rough leaf and showing another, placing in a cold frame, keeping close for a few days. When the plants are established air is admitted freely. They are shifted from 3-inch to 5 or 6-inch pots before the roots are very closely matted, and from these are transferred to 8 or 9-inch pots. It is necessary that the plants have plenty of room and light—the fierce rays of the sun being broken by shading. They are duly attended to with water, a gentle sprinkling overhead in hot weather of an evening being very beneficial. The plants will be advanced for flowering by early October, but will not expand freely without a temperature of about 50° from fire heat. In an ordinary greenhouse they will flower by January and continue until March. If aphid, for which certinise the plants frequently, appear, fumigate with tobacco.

To flower in spring sow in June, and place in a shaded frame, growing on in the same up to October, and then transfer to a pit or other low structure where they will have plenty of light, and ventilation with safety from frost. Shift into larger pots as required, taking care the balls are not very closely matted before each potting. They will flower from March until June. A slight shade when in flower is necessary, and weak liquid manure may be given at every alternate watering after the pots are filled with roots.—G. ABBEY.

(To be continued.)

JERUSALEM ARTICHOKE.

JERUSALEM is a popular corruption of the Italian name for the Sunflower, *Girasole*, which is literally, to turn to the sun. Artichoke was applied to this vegetable because its tubers when boiled have a flavour like that of the head of the common Artichoke. It belongs to the same botanical genus as the Sunflower, and is the *Helianthus tuberosus*, a native of South America, and is becoming increasingly popular as a culinary vegetable for winter use.

Not many years ago it only existed in a few gardens much as Horseradish existed, being left to occupy the same plot of ground year by year; a few miserable tubers were dug up as they happened to be wanted or could be found, and receiving no systematic or intelligent cultivation. That negligent mode of treating the Jerusalem Artichoke has happily become obsolete, and now the crop is cultivated as a staple winter vegetable in nearly all well-managed gardens. Neither is it limited to the gardens of the wealthy, for as its usefulness became known its cultivation spread into the home plots of every class.

All consumers of vegetables do not, of course, relish the peculiar flavour of Jerusalem, or, as they are becoming popularly known, "Potato-Artichokes," any more than all men enjoy Parsnips; but Artichokes are approved by the palates of most people, and hence these tubers are now offered in considerable quantities in the public markets. The increase of Jerusalem Artichokes has probably received a stimulus in consequence of the periodical destruction of the Potato crops by the murrain, and a desire has been thereby fostered to find a substitute for the indispensable "earth fruit," the Potato; but neither Artichokes nor any other root can be regarded as a satisfactory substitute for the Potato, any more than Cabbages are substitutes for Cauliflowers, or Beans for Peas.

Jerusalem Artichokes are essentially different from Potatoes, inasmuch as the former contain very little starch, while in the Potato starch is a considerable and valuable constituent. But that does not prove that these Artichokes are to that extent inferior to Potatoes in nutritious properties. The Potato has, perhaps, been over-estimated as a flesh-forming vegetable, and possibly the Artichoke has been under-estimated

as an article of food because of its deficiency of starch, but it contains what is closely allied to starch, inuline, also sugar, which is not a component of the Potato.

Taste is sometimes regarded as trivial, but so far from being unimportant it is all-powerful. "Why do you smoke tobacco?" said a gentleman to his coachman in my hearing. "Because I like it, sir," was the reply. The obnoxious nature of the "weed" was then as forcibly as possible placed before its votary, and when it was hoped that some impression had been made on Jehu, his only response was, "I can't help it, sir; I like it," and he continued its use until the end. So it is with vegetables. Potatoes have become popular because people "like them," and Jerusalem Artichokes will also become more popular than they now are as they gradually find their way to the tables of the "masses." There are thousands who have not yet tasted these Artichokes. I have occasionally given a few to my industrial friends for a first taste, and it has been strange indeed if some of the household has not "liked them," and as a consequence I have seen their admission into not a few cottage gardens. But it is not as providing a "dick" that they are alone useful in small families, for they are particularly valuable for "assisting" in soups. Many a family meal might be made more enjoyable by the aid of half a dozen Artichokes, and especially when, as is often the case, the butcher's shop has only a limited share in the proceedings. The full value of these Artichokes for rendering thin soups thicker, and insipid broths toothsome, has not yet become fully recognised. It is not as affording a substitute for Potatoes, but as an adjunct to them that they are recommended, and a few should be planted in many more gardens than is the case at present. They are by no means dainty as to soil, and are productive; their tops also in some places being useful, for horses and cattle will eat them greedily; but what animals will eat Potato ham? The tubers of Artichokes are also liked by most animals, and they are relished by and are beneficial to poultry.

Than Jerusalem Artichokes no crop is more easily cultivated. Rich soil is not necessary, neither is deep trenching; in fact, good crops are produced on comparatively poor and hard soil. If the ground is very deep and rich, luxuriant tops are produced and large ugly tubers, while poorer and firmer soil is promotive of smoother and more useful tubers.

A common mistake is made in planting too closely. Jerusalem Artichokes never yield so well as when planted in a single row, and in this way they are often useful in forming a screen—hiding something which is best out of sight—during the summer months. There are not many gardens where a row of them is not only not admissible, but where their appearance would be an advantage. Look out for such places, and plant in single rows if you desire the greatest yield. If it is necessary to grow in plots on several rows, the sets should not be less than 3 feet apart; in a single row the tubers may be a foot apart. Now is the time for planting, covering the tubers 3 or 4 inches deep. In the cultivation of this crop there is no fear of injury resulting by frost or any disease. It is a poor man's and a rich man's vegetable—a crop, in fact, for everybody who has room for growing it.—J. W.

NEW ROSES OF 1877.

WHEN are we to have any information about new Roses? In the present dull season any information from our great Rose-growers and importers would be thankfully received by very many readers.

Assuredly English-raised seedlings are coming to the front. I have reason to believe that they will receive special attention in the National Rose Society's schedule, which will shortly be published, and to which Mr. Cranston has given such a grand start with his fifty-guinea cup. I incline to think that our English-raised seedlings are beginning to do more than hold their own against the more numerous French productions. Last season produced some grand new English Roses. Will anyone give any idea what we have this year to expect? I see that Mr. Laxton's stock has been purchased by Mr. Turner; in such hands we may confidently expect real additions.

I have before me Messrs. Ewing's of Norwich list of new French Roses. It is impossible to judge much from descriptions or without seeing the Roses growing, but among the sixteen mentioned there appear to be some of promise. Two or three which are really good are, I apprehend, quite as many as can be expected from an average year. A seedling from Barons de Rothchild—M. L. Pernet (Pernet)—appears hopeful,

"retaining the same habit as its parent." The colour is stated to be very bright rose. Mons. C. Tonrier (Levet), deep rose, obtained a first prize at Lyons, as did also Mdlle. L. Poizeau (Levet), Tea, orange-yellow. Another Tea of 1876, Beauty of Glazenwood, if it comes up to its description is likely to prove interesting, being "yellow-gold striped and flaked with carmine, and may possibly prove," we are told "an entirely new genus." A pink Gloire de Dijon (a sport) is also spoken favourably of by the Messrs. Ewing, as even more robust than its still unrenowned parent.—A. C., Brockham.

FLOWER-GARDEN NOTES FOR 1877.

THE latter half of February and the whole month of March are always a busy time with those who have flower gardens to plant in summer. Many kinds of plants, especially Geraniums, may be wholly provided with advantage the autumn previous, but there are others which are best raised in spring, and there are places, again, where there is little or no accommodation for wintering bedding plants, and still they are required in large quantities in summer. It is in cases of this kind, and they are very numerous, where a push has to be made now with propagation. Before beginning this operation, however, there should always be a clear understanding of what is wanted. It is no use propagating a large quantity of one thing when the half of it will not be wanted, and neglecting another of which there will not be enough. This is often the case with plants which are easily raised from seed or cuttings, and I think this may often account for the undue predominance of one plant over another in many flower gardens.

Before beginning to propagate to a large extent, plans of the flower beds to be filled in summer should be drawn out, and the way they are to be planted should be distinctly marked on each bed, then a calculation made of how many plants it will take of each kind to complete the arrangement, and propagate accordingly. This saves all confusion at planting time. Our flower-garden arrangement for the incoming summer was all understood before the new year, and this admits of discarding any unsuitable plants and working up a sufficient stock of those of the most meritorious description. Much might be said about the arrangements of the different plants and colours in the beds, but this is a matter I do not intend enlarging upon, because I find that a combination which one person would call beautiful another would consider the reverse. Some like yellow in nearly every bed to the partial or total exclusion of a desirable amount of other necessary shades and colours; but good taste is always shown by equalising all hues and allowing nothing too "hard" or too "soft" to appear in any arrangement whatever.

Small bed look best planted with one variety of plant, but where there are a number of such beds not far from one another the same subject must not occur too often. As to what colours should go against one another must depend very much on the size, number, and design of the figure or beds. I will only detail one arrangement by way of illustration of what is considered lawful by the regulation of harmony and contrast. Take a small group of five beds, such as may be found in many gardens, with a circle as a centre and four outlying beds forming a square near to it, but with small grass or gravel walks between—plant in the centre of the circle yellow *Calceolaria*, next to this Purple King *Verbena*, outer edge *Dactylis glomerata* or dwarf white-leaved *Geranium*. Centre of four outside beds scarlet *Geranium*, next to this Cloth of Gold or yellow *Calceolaria*, outer edges blue *Lobelia*. It will thus be seen that between the yellow in the centre and the bands in the outer beds there are blue, white, and purple intervening, and no other two colours are alike.

Where plants are deficient for this or any other arrangement no time must now be lost in increasing the number. Those having well-heated propagating houses have no difficulty in rooting any quantity of cuttings without loss, but, unfortunately, many with flower gardens have no such convenience, and are therefore obliged to resort to other means. The next best thing to a house for striking cuttings is a good hotbed. Leaves and long stable litter are the best materials with which to form this. The two should be mixed in a heap together in about equal parts. After lying for about a week turn the whole over and allow it to lie as long again, and then make it into a firm bed about 1½ feet larger in every way than the frame which has to be placed on the top of it. When the frame has been set on build up the sides until they are level with the top. It will be a few days before there is much heat; and a day or

two before any cuttings are to be put into it place a layer of sawdust 8 or 10 inches deep in the inside of the frame. This is an excellent material in which to plunge the pots. When all this has been done cuttings may be put in at once. Have a quantity of clean 6-inch pots, half fill each of them with crocks, spread a few rough leaves over them, and fill up the remainder with fine leaf soil and sand. When the cuttings are choice and tender a layer of sand should be put over the surface of all. As soon as the pots have been filled with cuttings give a slight watering and plunge them at once. All kinds of common bedding plants, such as Verbenas, Iresines, Tropaeolums, Ageratums, &c., root freely under the same circumstances, but after they are rooted care should be taken not to expose them too soon to cold, and do not be in a hurry to "pot them off" after they are rooted, as they are all the better of becoming well hardened both in root and leaf before this is done.

Some propagators pride themselves in making a plant out of every joint and leaf. This may be desirable when anything is scarce, but it is not recommendable. Small cuttings make small plants, and these are of very little use where a large extent of ground has to be filled at bedding-out time. When *Calceolarias* are scarce I find tops dibbled into a cold frame now make fine plants by May.

Many kinds of annuals for bedding may be sown in the open ground, but others must be raised in heat and under glass. These comprise such as *Lobelia*, *Pyrethrum*, *Perilla*, *Stocks*, *Tagetes*, &c. These seeds should be sown in pans or boxes and set in a heat of 60°. Before the seedlings become crowded or drawn they must be transplanted and given sufficient room to develop and harden until they can be finally "bedded out."—S. W.

SEAKALE.

PERHAPS there are no garden crops whereon differences of opinion as to mode of culture, &c., do not exist amongst gardeners. Mr. Abbey on page 116 has referred to Seakale, and has detailed his mode of culture and plans of forcing with considerable minuteness. Yet careful as your correspondent has been to omit nothing of importance, he has yet overlooked two cultural points which, in my opinion, are at least as worthy of mention as the details alluded to. What is the cause of Seakale seed so often refusing to vegetate freely, causing the plants to appear irregularly and over a long period of time? Many old amateurs and young gardeners have experienced this difficulty, the only difficulty in fact, in raising plants from seed; yet Mr. Abbey makes no allusion to it, and does not tell us that the outer husks of the seed should be broken before sowing. If the seed is sown in the spring, and a term of sunny weather follows, which is generally the case, no previous preparation of soil can ensure the germination of the seed and the free growth of the young plants if the seed has been sown with its hard outer envelope unbroken. When the outer covering—the prison wall—of the seed is partially shattered germination is considerably expedited, and the young plants appear above ground as regular as so Radishes.

Next, What is the reason of small crowns? Bad position or poor soil are not the only causes of puny crowns and small "Kale," nor, indeed, are they the primary causes; the great evil is overcrowding. Mr. Abbey gives correct information as to the distances for planting, but that is not sufficient to ensure bold crowns. He tells us that previous to planting the main crown should be cut off to prevent the formation of a flower stem, when other crowns will form and grow large enough for forcing. Yes, they will do so under one condition, but which is (no doubt inadvertently) omitted—namely, the crowns must be thinned out when in a growing state. When the primary crowns of Seakale are severed from the roots a cluster of other crowns form, it may be a dozen in the space of a few inches. It is impossible that these can become bold and plump if thinning is not resorted to. After the stools have grown, say 3 inches, they should be examined and superfluous growths should be removed, leaving from one to three shoots on each stool to form future crowns.

It is only when room is afforded for the development of the foliage that good crowns can be perfected, and without a thinning-out of the growths during the spring preventing overcrowding it is impossible that vigorous crowns can be formed and the best Kale be produced. Yet how often is this simple but necessary practice of thinning crowns overlooked in private gardens! Thinning of the crowns is not neglected by the

market growers. They cannot afford to waste manure in growing a multiplicity of leaves, large clusters of small crowns, and weakly Kale; they must have fewer crowns and good and stout Kale; hence the importance of a timely and sufficient thinning-out of the superfluous growths. This is one of the principal points (and withal is one of the most neglected) in the culture of Seakale.

When stout crowns are produced forcing is a very simple matter. Mr. Abbey writes disparagingly on the old mode of forcing in beds; he calls it expensive, troublesome, and antiquated. Without underrating the advantages of digging up the roots and forcing them in frames and Mushroom houses I have yet an opinion that more and better Kale is produced by forcing in beds than by the "modern" plan of digging up the roots. Seakale pots are cheap, and with care will last a lifetime; but even these are not indispensable, for rough wooden skelton covers or a few sticks placed round and over each stool are sufficient to keep the heating material from pressing on the crowns. In fact there is no mystery about forcing Seakale, nor growing it either. An open position, good soil, and growing the crowns thinly, are the essential points to be attended to.

There is no reason why a few stools of Seakale should not be grown in even small gardens, for the roots, as stated by Mr. Abbey, may be dug-up and forced in any dark place; or if the produce is not wanted early the sun may do the forcing and garden soil the blanching—heaping the soil over the crowns in the form of cones, when the Kale will push its way through, and be of the first quality—stout, tender, and affording an agreeable change for the table during April and May.

—A MARKET GARDENER.

PROPOSED CARNATION AND PICOTEE SHOW.

IT OWES its origin to the fact that, save by this special show, no opportunity is afforded to the cultivators of these flowers for their presentation before the public, neither of the two societies devoted to horticulture offering inducements in the shape of prize, or days of exhibition, suitable for their production, whilst undoubtedly a further incentive to this course of action may be found in an assertion made some time since in your pages—viz., "that florists' flowers were hopelessly at a discount in the south."

When I state further that the proposed show is due directly to the suggestion of Mr. Charles Turner of the Royal Nursery, Slough, and of Mr. Douglas, who has charge of the fine collection at Loxford Hall, I shall have said enough to assure your readers the display will be of great merit and worthy the notice of all lovers of these very beautiful flowers; whilst further, a reference to the subscription list, copy of which I enclose, will show the promoters do not solicit aid without first contributing liberally from their own pockets.

A schedule of prizes which has been proposed, and which the promoters believe would appropriately illustrate the cultivation and development of the flowers, offers ninety-one prizes, including in Carnations collections of twenty-four and twelve, and single specimens in each class. Picotees, white grounds the same; yellow ground Picotees, prizes for collections of twelve and for single specimens; miscellaneous, selfs or fancies (a class usually especially interesting to ladies), three prizes each of twelve blooms; and plants in pots two prizes each for twelve specimens, resulting in an aggregate of 462 specimens, and a money total of £54 16s. The funds thus far contributed amount in round numbers to fifty guineas; a further sum of £15 to £20 is therefore needed to provide the desired prizes and the expenses incidental to the show, and to this extent the promoters will gladly accept of help from any of your readers disposed thereto.—E. S. DODWELL, Hon. Sec., 11, Chatham Terrace, Larkhall Rise, Clapham, S.W.

McLAREN'S PROLIFIC RASPBERRY.

"A MARKET GARDENER" on page 94 makes inquiries whether any growers can detail their experience regarding McLaren's Prolific. In November, 1872, I had occasion to make a fresh plantation of Raspberries. The red varieties planted consisted of Fastol, Semper Fidelis, Carter's Prolific, and Red Antwerp, and for experiment one dozen plants of McLaren's Prolific were at the same time planted, and all the sorts were trained to wire trellises. McLaren's favorite has turned out vastly superior to any of the other varieties named. It is very early, ripening fully twelve days before any of the others, and the

fruit is very large and handsome. It is a most abundant bearer, and is of a very robust and yet dwarf habit of growth. Altogether I consider McLaren's favourite Raspberry a very valuable acquisition. I believe it to be a most profitable variety and well worthy of extended cultivation.—A GARDENER, *Durham*.

THE EFFECTS OF AMMONIA ON VEGETABLE AND INSECT LIFE.

MUCH has been written from time to time on the above subject in your Journal, and I doubt not with profit. In the year 1871 Mr. Abbey detailed his practice with ammonia in dealing with mealy bug, red spider, &c., which was followed by an article from Mr. Wright informing us distinctly that ammonia arising from guano heated in a liquid state would destroy or keep at bay thrips and red spider. In those articles the writers, while testifying to the value of ammonia as an insect-destroying agent, advised also that it should be used cautiously, as an excess of it would be injurious to vegetation. But there is another manure which gives off more ammonia than guano, and is, I believe, more potent and dangerous—namely, horse or stable manure, for when in its first stage of decomposition it gives off ammonia in volumes, which is equally as destructive to vegetable as animal life. In my early vinery there is a pit about 4 feet deep, which every year we fill with stable manure and leaves. In the spring of 1876 we put a quantity of manure fresh from the stable, at the same time sprinkled it well with water, and in a few days it began to steam and give off quantities of ammonia, which destroyed the old foliage of the plants in the house but not the young leaves—a fact I cannot explain.

The plants in the house were a miscellaneous lot, therefore I will describe the effect on each. Ferns stood it badly, as all the old fronds were blackened and presented the appearance of having been burnt or severely scorched. *Polargoniums*, *Echeverias*, *Lobelias*, *Cyrtipediums*, *Contradenias*, *Azaleas*, *Statives*, and *Tricolor Geraniums* all suffered much from loss of foliage, but soon afterwards commenced growing vigorously. *Camellias*, *Cactuses*, *Oranges*, &c., stood in the house without being the least affected. The Vines were only swelling their buds, and consequently escaped injury. We repeated our practice this spring, but with more care, as we put on air as soon as the dung began fermenting.

I have read a great deal lately about the injurious effects produced by fumigating with tobacco, burning sulphur in Peach houses and vineries to destroy red spider, and painting hot-water pipes with sulphur for the same purpose. All these practices have been classed as being more or less dangerous, and extreme caution has been advised in their adoption. Perhaps I should qualify this statement, as fumigating with tobacco is included, which is not very dangerous; yet there are some plants, Ferns for instance, which will not stand tobacco smoke, and Generaceous plants do not like it.

I will now refer to the effects of ammonia on insect life. Mealy bugs, I believe, are not easily killed by the fumes of ammonia. Pickings and squeezing them, or smothering them with paint, as on Vines and the wood-work of houses, are, I conceive, the safest means of destruction. It has been stated that this insect cannot stand water or damp, but where its moisture more plentiful than in a steaming stove? I might almost say that mealy bugs are "waterproof," as I have rolled them through tobacco and soft-soap liquid, and they have afterwards run away as if nothing had happened. The covering of dust, or "meal" as it is called, enables the insect to hid defiance to most liquids, at least when they are applied with safety to the plants. Paraffin oil will kill bug at once, but it will also kill the plants or trees. To become well acquainted with anything is to know its habits from birth till maturity. To this end I have watched this insect in all stages. I will first mention a fair-sized one secreted under bark or under a leaf: soon it will be surrounded with something like very fine cotton wool, and in the process of time the "nest" will be as large as a Cucumber or Melon seed. In this the bug deposits its eggs, not less than one hundred. Now, if the syringe is brought to bear upon these nests much good results, but in a moist stove or vinery the young progeny thrives equally as well as the plants.

As regards red spider I cannot say, like some of your correspondents, that I "never have to do with it," for I have had much to do with it. I find the best cure and preventive is cleanliness, plenty of syringing, and washing the wood, trees and

plants, in winter with strong soft-soap water. It has been said that red spider will not frequent healthy trees or plants. I believe this is a mistaken idea, for there is nothing they like better than healthy pasture. What gave rise to this, was, I believe, they were seldom found on healthy foliage; for trees or plants infested with them, if healthy, will not be long so, but that is no reason why they would rather have an unhealthy pasture. Neglected plants afford them a splendid opportunity for the incubation of their eggs.

Thrips is less hardy than the last-named insect. They can be destroyed by tobacco fumes and tobacco water, and syringing with clean water will destroy their eggs, which are very numerous. Ammonia will also kill them, as I observed many deaths from what I described above about the stable manure. We may write much, and talk much, and be fond about our discoveries of insecticides and such like, still we are the assistants of insect-propagation in our gardens by affording a congenial atmosphere and an undisturbed season for incubation.

I had written thus far when the Journal arrived, and I saw a paragraph calling attention to the use of paraffin against scale and mealy bug. I have not the presumption to question Mr. Kerr's practice, but I would caution every young gardener against the use of paraffin. In the year 1873 I mixed some with paint which I was preparing for Vines and Peach trees, the former being much infested with mealy bug. I did not perceive any harm it did the Peaches, but my strong hee by Vines were so much affected that the buds as they began to wither, and it was a long time before they anything like recovered. I have never used paraffin since. Peach trees infested with scale can be successfully cleaned of them by washing the trees with soft-soap water during winter, and afterwards dressing them all over with a composition of tough clay, sulphur, and tobacco water.—B. G., *Co. Down*.

NOTES AND GLEANINGS.

IT was announced in the annual report of the ROYAL HORTICULTURAL SOCIETY that the Wednesday Committee meetings will henceforth be held in the conservatory, after which a military band will be in attendance. The next meeting of the Committee will therefore be held in the conservatory, and a fine Show is anticipated.

—WHAT *Azalea amoda* is amongst its species—namely, small, early, and distinct, so is EARLY GEM amongst Rhododendrons. This, as it has been exhibited by Messrs. Veitch, is exceedingly early, dwarf, and floriferous, and for producing pleasing masses of flowers, either in the garden or conservatory, it is a plant not to be overlooked. The colour of the flowers is rosy lilac, and the plant is of very close habit. It must be regarded as an acquisition for winter and spring decorative purposes, its natural precocity rendering but little forcing necessary to assist in unfolding its numerous flowers during the early months of the year.

—"I NEVER before saw so much blossom on the LAURENTIUS as there is this year. All the winter it has been most useful for the flower stands, and with a few green sprays from the shrubbery and a few Primulas to give colour has been very effective, and since the Crocuses, Heath, and other spring flowers have come in still more so. I do not consider it later than in some other seasons—last year for instance. Some blossoms always come out in the autumn, and the others wait for heat, but occasionally the frost in winter is so severe that all the remaining blossom buds are destroyed, and in comparison with those seasons the present blossom may be said to be later, but not otherwise.—AMATEUR, *Cirencester*."

—WE have received the following note from a "City Man" in reference to SUTTON'S GOLDEN GLOBE SAVOY:—"I have had three sorts of Savoys sent me from a garden in Surrey, and could not resist admiring the beautiful appearance of Sutton's Golden Globe. When cooked it was also the most tender and delicate in flavour of the three. Its colour may be an objection with some, but I think no one can dispute its superior quality."

—THE following HARDY HERBACEOUS PLANTS flowered during February at the Messrs. Rollisson & Sons, Tooting Nursery:—*Galanthus plicatus*, *G. nivalis*, *Scilla sub-niva*, *Saxifraga rubra*, *S. oppositifolia major*, *S. oppositifolia pyrenaica*, *S. cordifolia*, *S. Stracheyi*, *Dianthus Maria Perle*, *Eranthis hyemalis*, *Hepatica angulosa*, *H. triloba alba*, *H. triloba staminudis rubra*, *H. triloba rubra*, *H. triloba rosea*, *H. triloba cœrulea*, *Iris reticulata* (fragrant as Violet), *Sisyrinchium grandiflorum*, *Ery-*

thronium dens-canis in variety, Muscari pallidum, Primula denticulata, P. polyantha, Helleborus niger, Aubrietia deltoidea grandiflora, and Tritileia grandiflora.

It is not generally known that anyone may now become a member of the ROYAL HORTICULTURAL SOCIETY on the payment of an annual subscription of one guinea, and this entitles them to free admission to all shows, promenades, and meetings of the Society except the annual meeting. In short, it gives the privileges of a Fellow with the exception of voting at meetings on questions of government and finance, and these are privileges which not one in a hundred of the Fellows ever avail themselves of. What people mostly want are to be allowed to walk in the gardens and to attend shows and promenades, and this they can do by becoming guinea members.

MR. N. HODGKIN writing to us from The Gardens, Downgate, Sandhurst, Kent, on the MILDEWS of the SEASON, states that he has now (February 12th) Veroniceae, Hepaticae, Heaths, white Mezereon, Snowdrops, Crocuses, Jonquils, white and yellow Narcissus, and Hyacinths, all in full bloom. He has gathered Roses all the winter, and on February 13th Gloire de Dijon, Général Jacqueminot, Souvenir de la Malmaison, Maréchal Niel, Lamarque, and Banksian Yellow, as good blossoms as in summer, from north-west and south-east walls. Leaves of bulbs of all kinds are above ground; Lilium punctatum, roseum, album, rubrum, and longiflorum are 9 inches high, all in the open ground. A Daphne indica rubra planted in a sheltered position has been in full bloom for the last six weeks, and vegetation generally is in a very forward state.

In "The British Trade Journal" is a portrait and memoir of Mr. MARTIN HOPE SUTTON, of the well-known Reading Nursery firm. It states: "The day of his nativity (March 14th, 1815) was one of misfortune. On it occurred a bank failure, by which his father was seriously affected, and this calamity was intensified by the news that a large London house to which Mr. Sutton père was in the habit of consigning large quantities of flour had come to the ground. The worthy gentleman seems to have maintained a bold front in the face of these reverses, and to show his confidence in the fulfilment of the motto, 'Le bon temps viendra,' gave to his son the name of Martin Hope. In 1832 the youth was promoted from school to a place in the parental counting house. His father's business, located in Reading, was that of a miller and corn merchant, an offshoot being small dealings in agricultural seeds. Young Sutton was an enthusiastic botanical student, and a lover of floriculture for its own sake, and he was allowed to dabble at his own risk in the raising and selling of garden seeds, a branch which his father deemed too insignificant to form an integral part of the seed business. His sober ambition was to establish a nursery garden, and by-and-by it was realised. A small plot of ground was secured, and it was not very long before a gorgeous Tulip bed in connection with it became in the blooming season one of the local attractions of Reading. In 1837 the quiet enterprise of the young man met its reward in the establishment of partnership relations between himself and father, under the firm of John Sutton & Son. Their nursery began to gain a repute, and at the time when Dahlias were the fashionable rage in horticulture, their floral collection was referred to by Miss Mitford in a charming article entitled 'The Loet Dahlia,' which appeared in 'Chambers's Edinburgh Journal,' as 'the most choice and select I have ever seen.' In the year 1843 Mr. Alfred Sutton, who had for some time been actively associated with the business, was admitted as a partner, and the firm assumed the title of Sutton and Sons, by which it is still known."

As an instance of the mildness of the winter in West-morland there is in the gardens, Fox Ghyll, Ambleside, a SCARLET RHODODENDRON IN FULL BLOOM. The first flowers cut from it were on the 19th December. It is usual for it to flower about Christmas, but as a rule gets cut down with severe weather. The Laurustinus also are two or three weeks earlier in flowering than they are generally.

MR. FITHERS, The Gardens, Munster House, Falham, has sent us sprays of AUCUBA JAPONICA more heavily laden with berries than any that we have hitherto seen. The sprays have been cut from large shrubs which have had no male plants near them, and their fruitfulness can only be accounted for by the distribution of pollen conveyed by the wind from Mr. Dancer's Nursery, about 200 yards distant from Munster House. This is another proof that it is not always necessary to place the male and female plants side by side for ensuring a crop of fruit. We remember having seen large Aucuba bushes at

Denbies covered with fruit without artificial fertilisation having been resorted to. Male plants flowered in the garden some distance from the female shrubs, and the wind conveyed the pollen in the most effective manner. All who possess shrubs of the old mottled Aucuba should also obtain male plants, and the beauty of their shrubs will be enhanced when producing clusters of brilliant scarlet berries.

"N. B." sends us a note saying that if JUSTICIA FLAVICOMA recently mentioned by Mr. Anderson is identical (as he thinks it is) with Schaneria calicotricha he can endorse all that has been said in its favour, as he has found the plant which he has under the name of Schaneria one of the brightest and best of winter-blooming plants.

"MIDLANDER" asks what acid is in the GOOSEBERRY? We print in reply the following analysis made by M. Berard. Green Gooseberries have been analysed by him, both before they were ripe and when ripe:—

	Unripe.	Ripe.
Chlor. phyl. (green coloring matter)	0.65	0.64
Sugar	0.53	0.78
Gum	1.86	0.88
Albumen	1.07	2.41
Malic acid	1.20	0.81
Citric acid	0.12	0.99
Lime	0.84	8.01
Fibrin, including the seeds	86.41	81.10
Water	100.00	100.00

WHOEVER wishes for full and authentic information of all kinds relative to the COLONY OF VICTORIA should refer to the "Notes" published "by authority." It is historical as well as geographical, meteorological and statistical. It records that there are there 1500 gardeners not domestic servants; that about £40,000 worth of Potatoes are exported yearly, and the following prices of some garden products in 1871. Potatoes, wholesale, £4 to £4 10s. per ton; retail, 3d. to 1d. per lb.; Onions, dried, 9s. to 20s. per cwt.; Carrots, 6d. to 1s. per dozen bunches; Turnips, 6d. to 2s. per dozen bunches; Radishes, 4d. to 6d. per dozen bunches; Cabbages, 9d. to 10s. per dozen; Cauliflowers, 2s. 6d. to 8s. per dozen; Lettuces, 2d. to 2s. per dozen; Green Peas, 1½d. to 4d. per lb.

MESSRS. BACKHOUSE & SON state GALANTHUS IMPERAT is the finest of all Snowdrops. The leaves are narrower and altogether smaller than those of G. plicatus (the Crimean Snowdrop), while the flower is larger, the petals being nearly or quite one-half longer than those of G. nivalis. A graceful Snowdrop, resembling the common one, but with flowers nearly 1½ inch long, forms no ordinary addition to our early border plants, and must be welcome everywhere.

We regret to have to announce the DEATH of Mr. HENRY ORMSON, the eminent hothouse builder and hot-water engineer, which occurred on Tuesday, 20th of February, in the Isle of Wight, where he had gone for the benefit of his health.

MR. DARWIN has received as a TESTIMONIAL, on the occasion of his sixty-ninth birthday, an album, a magnificent folio, bound in velvet and silver, containing the photographs of 154 men of science in Germany. The list contains some of the best known and most highly honoured names in Europe. He has likewise received on the same occasion from Holland an album with the photographs of 217 distinguished professors and lovers of science in that country. These gifts are not only highly honourable to Mr. Darwin, but also to the senders as a proof of their generous sympathy with a foreigner; and they further show how widely the great principle of evolution is now accepted by naturalists. A German correspondent informs us that the German album bears on the handsome title-page the inscription "Dem Reformator der Naturgeschichte, Charles Darwin."—(Nature).

AZALEA PESTS.

It is well known that Azaleas are extremely liable to become infested with insects, especially red spider and thrips. The time these are most likely to become established is when the plants are in bloom, as syringing or fumigating cannot be done then. After they go out of flower it is a very general practice to place the plants in a vinery to start them into growth. The insects have then a fine opportunity of making their way on to the Vines, and they are not slow in availing themselves of the chance. Now it is very desirable that this should not take place, because when the insects find their way to the Vines thus early they are certain to do much mischief before the end of the

season; whereas if they were not introduced with the Azaleas it is more than probable they might never have found their way in. My advice to all putting Azaleas into vinerias at this or any other time is to be certain that they are thoroughly clean. I have found no difficulty in killing every insect by the following means:—I fill a large tub or barrel full of clean water. Tobacco juice is then added until the water is the colour of London porter. Gishurst compound is then dissolved and added until the water looks like soapuds. The plants are then in an inverted position submerged in the solution and allowed to remain about one hour, and I have not seen the insect which will survive this treatment. The mouth of the pot is rested on pieces of wood laid across the tub. When they are taken out of the water the mixture is not hurriedly syringed on the leaves, but, on the contrary, it is allowed to dry on, and this I am of opinion gives the leaves a disagreeable taste to the insects for a long time afterwards.—J. M.

ROYAL HORTICULTURAL SOCIETY.

My first letter on guinea fellowships, printed on the 21st of October, 1873, called "upon some one with time and a fresh head at his disposal to come forward and take the lead," and it was only when no one responded that, rather than a good work should be shelved, I determined after urging the Council about this time last year to make the appeal to the country, to attempt the work myself.

I said, and say still, that our successful experiment tried in this neighbourhood is in my opinion absolutely conclusive. If we could get about fifty owners of gardens who had either never joined the Society or who had left it, to express their willingness to become guinea Fellows or find a substitute, it is nearly certain that with time and work other neighbourhoods would do likewise, with the result that we should have Fellows enough to furnish all the funds which could possibly be required.

"A GUINEA MAN" considers that "the results have been impotent." I do not agree with him. In our first issue of names of would-be guinea Fellows there are a greater number of those of the representative horticulturists of the country than are contained in the long last-printed "list of Fellows," that of 1873, before the great defection took place. "A GUINEA MAN" quotes Mr. H. J. Veitch's speech at the meeting of the 13th. I think Mr. Veitch should have given me notice of his change of mind, though this cannot have been a very decided one, as he said publicly after the meeting that he still believed in the guinea fellowships; but he certainly should not have stated that one-third of our would-be Fellows were already Fellows of the Society. Our names were 377; out of these forty-three were, or had been (some had left) "already Fellows," but five of these were life Fellows who had compounded, therefore any further payment from them would have been so much to the good. So, in fact, instead of two-thirds as stated, more than nine-tenths of our names were practically new.

I fully admit that some who, like "A GUINEA MAN," were "invaluable in the guinea scheme," rather disappointed me. (Did "A GUINEA MAN" ask a single friend to join?) But where influential horticulturists took trouble in some districts they brought in excellent names. Witness Col. Page of Llandaff, Rev. Harper Crewe of Tring, Dr. Lionel Beale of London, who all collected first-class names. Miss Hope of Wardle, too, brought in three very good names of ladies, besides her own well-known one. Our number of names are the results of the labour of but a few; with a little more study and experience we shall learn how to induce more to work. Our short list, too, contains such influential names that it must tell. Some first-class names have come in since our list was printed. A Yorkshire horticulturist, with his county's energy, has gone to the expense of a lithographed letter from himself, which he is sending round in his district with our circular enclosed.

Now as to the future. What has made me work is this strong fact, that the Society has never for any time together (since its very early days when it started as a scientific society), prospered. It has never trusted to those most interested in horticulture for its support. All other scientific societies have trusted to those most interested in their several objects and have prospered. I believe if we should so change the constitution of our Society as to resemble theirs in the above respect, horticulture having more friends through the country than any other science has, it would become the most prosperous Society of all.

The Council have admitted three classes, one of Fellows paying £4 4s. and having two transferable tickets, a second paying £2 2s. having one transferable, a third members without a vote having one non-transferable ticket. I believe one reason for withholding a vote from these last was the fear that so many in the neighbourhood might become guinea Fellows that their votes would swamp those of Fellows not on the spot. A member of the Council, after the meeting, I understood to say would have supported guinea fellowships to those living outside the London letters. If the Council would agree to this, I think that many of the best horticulturists of the country rather than wait until 1892 would come in, though some would not. Fellows living out of town have less good from the gardens, therefore it seems fair that they should pay less. It has been said, Let those who want to vote pay £2 2s. Not a few of the very best horticulturists of the country cannot or will not pay more than a guinea, and I do not think it reasonable to ask more from them. Anyone looking at our list will see supporters from distant parts of the kingdom; many of them when sending their names said that they could not expect personal good, but to help a Society for promotion of their favourite science they would become guinea Fellows. I must again remind, that some of the best horticulturists in the country whose names would add strength to any society, and who have great influence in their districts (especially clergymen), are often not overburdened with guineas in proportion to the number of calls upon them, and that a guinea is as much as they will or can be expected to spare.

If these representative horticulturists would come in—and I believe they would in numbers—the Society would be leavened with the horticultural element which has been the great object of our work. Some would say the Society has still the South Kensington encumbrance. True, but if they were asked only for a guinea it is not they who would pay for this, they would get horticultural consideration for their guinea, while the £4 4s. and £2 2s. subscribers would pay for the South Kensington Gardens. These have often been likened to a white elephant, but it is not the white elephant (at least as far as horticulturists are concerned), that is an evil, but the having to pay for its keep, and this they would not have to do. If the Council will not grant guinea fellowships with votes to those living outside the letters, I would counsel going on collecting names and waiting, trusting to the chapter of accidents. The Council may rechange their policy, the £10,000 for the year may not be raised. The public or Parliament may effectually protest against the land bought with the people's shillings being used except for public purposes. In any case, judging from the tone of letters to me, I think the best horticulturists will not, by giving guineas for a membership without a vote, to that extent bolster-up what such a long experience has shown to lead only to unsuccess.

"A GUINEA MAN" speaks of the "approval of silence" of the meeting when guinea members were not given votes, and mentions that I was present. Guinea membership not having been mentioned in the report, I at first thought the Council had let it drop; but any way, the idea of guinea fellowship outside the letters not having then been suggested, and our supporters having only given their names for fellowship with a vote when free from encumbrance, we were not concerned in the matter; besides, I deny that silence gives consent, or means more than a desire to avoid needless discussion. For instance, the report says of the fortnightly meetings—"The large attendance of Fellows and their friends that are usually seen at these meetings." I whispered to my neighbour that I thought that the attendance had been notoriously painfully small, but did not consider it my business to protest against the statement.—GEORGE F. WILSON.

The following letter from Mr. Haughton has appeared in the *Pall Mall Gazette*:—

"SIR,—I do not in the least contest your right to criticise the acts of the Society and of the Commissioners; but I may not unreasonably ask for accuracy in the statement of facts when you seek to condemn the efforts of the Council of the former body on their merits. In your article of yesterday you speak of "public land" which the Society monopolises; its land being in fact no more public than that of St. Bartholomew's Hospital or of one of the City companies. The Commissioners hold in fee their South Kensington property as trustees for certain purposes which our law terms charitable. The benefit of that property by dedicating part of it as an ornamental garden was one of the objects avowed on the face

of the agreement to carry out which the Society's charter was granted; and the event has proved that the South Kensington Gardens have added to the surrounding property much more than their original value plus the money spent on them. The Society has so spent 75,000 on permanent works, and £20,000 or £30,000 on materials and labour—in all something like £100,000, which the advocates of the public now ask to confiscate; and it no more monopolises its gardens than the proprietors of the *Pall Mall Gazette* monopolise that popular journal. Opinions may reasonably differ as to what is a fair rent, but that paid for the gardens by the Society during the last fifteen years has considerably exceeded in amount that paid during the same time by the Royal Botanic Society for an equal acreage in Regent's Park. Your statement that the Society 'could not exist if it depended wholly on South Kensington' may be true if (as in your article) you limit this district to two or three streets, but it is otherwise if you extend it so as to embrace the metropolitan Fellows who enjoy the gardens there. So understood it would be more correct to say Chiswick on its present scale could not exist without South Kensington, for the scientific work carried on at the former place absorbs every penny of what I may be allowed to call purely horticultural subscriptions, together with a considerable rate in aid from the latter. In conclusion, I may say that if you will honour the Society with your presence at the next fruit and floral meeting on the 7th of March, you will not only see a display of plants worthy of the best of its bygone days, but will also be able to satisfy yourself that the gardens are far from being a wilderness."

NOTES ON POMOLOGY IN HEREFORDSHIRE.

(Read at a meeting of the Woolhope Club by the Rev. C. H. Fulmer.)

I WILL in my retrospective survey take a glance at the historic Apples and Pears which were formerly cultivated in Herefordshire, although most of them are best known now-a-days by their varieties. It seems to me I can most practically thus treat my subject, because I thoroughly endorse Andrew Knight's remark, though contrary, I am aware, to the opinion of the best old pomological writers, that "Herefordshire is not so much indebted to its soil as to some valuable varieties;" and in commenting on these varieties seriatim I shall be able to show you further that there is also great truth in another remark of Andrew Knight, that from the description that Parkinson (who wrote in 1629) has given of the Apples cultivated in his time, it is evident that many of those known by the same name are quite different and probably new varieties, some being so altered for better or worse as to assume quite a new seasonal or structural character. Among cider Apples, to which these remarks specially apply, the Redstreak or Scudamore Crab then reigned supreme; the early-fruiting Genet Moyle, its hardly formidable rival except with the ladies—both varieties long years ago overtaken and swept away by the tide of time; the Must and Golden Pippin, pigmy anatomies of their former selves; while the Foxwhelp and Styre in a moribund state are only existing on their past reputation, which their numerous progeny unfortunately does not in any degree give promise of sustaining.

I will take first some of our historic perry Pears on account of their extreme longevity and from being so well known to us all. The Teignton Squash is first in point of excellence if not of antiquity, having existed without doubt at the beginning of the sixteenth century. Its origin is unknown. Although in the last stage of debility and decay the old trees bear well, though disappearing fast. The growth of the Teignton Squash resembles very closely that of the Longland, a variety which is still flourishing, and of all Pears I should call the farmer's friend, as its fruit keeps fairly and makes very good perry; while to the housewife nothing can exceed it as a stewing Pear in richness and colour, before the Catillac and other late stewing Pears come into season. The Oldfield, however, is the best Pear we have, whether its fecundity or the lasting qualities of its fruit or perry is considered. Evelyn mentions in his day (1706) a gentleman who had some bottles of Oldfield perry brought him from a distance of eight hundred miles that was over forty years old, as rich and high-flavoured as ever it was—a perfect regale he calls it. I can also endorse Evelyn's eulogium, "*Penes auctorem fit fides*," as I have tasted some bottled perry from this variety over forty years old in perfect condition made from my own glebe orchard from original trees, I do not hesitate saying, although in full bearing, that are in their third century. These, however, I regret to say, are iso-

lated facts—the exception, not the rule; as the description of Palladius holds good now-a-days as in his time, centuries ago, that perry, chiefly owing to its irrepressible fermentation, "*Hycum durat, sed prima accessit estate*." The most picturesque and popular without doubt is the venerable Barland or Bearland, originally of Bosbury; the same old lofty-growing trees we see growing now most probably filled the tankards of the Herefordshire farmer and his guests in the seventeenth century, and is more a sister beverage—a right sort of smoke-pipe perry, as an old right-sorted farmer himself described Foxwhelp cider—than any other. Of desert sorts of historic Pears time will only allow of my mentioning two—the Easter Beurré and Beurré Diel, and to find them a local and special history. These two varieties, I have ascertained, were shown in far larger quantities at the last pomological exhibition than any others, and both in their selection and production reflected great credit on the growers. Looking at the market price of fruit in Covent Garden a short time back, and before the London season began, I found these two identical Pears alone mentioned by name at what must be considered the highly remunerative price of 5s. to 12s. per dozen; while Elenheim and Ribeton Pippins (again strange to record), shown at our pomological exhibition both by far greater quantities than any other variety of Apples, fetched from 12s. to 18s. per bushel. It is well, I believe, to comment on facts like these when in Herefordshire, the orchard of England, so many tons of first-quality fruit are suffered to perish through want of seasonable pruning, sheltering, or picking, or still more unpardonable neglect of the simplest rules to be observed in subsequent hoarding. Thus the homo counties and Hertfordshire, and even some parts of Yorkshire, who, as Phillips sings—

"do not disdain to learn

How Nature's gifts may be improved by Art,"

command a ready market; while Herefordshire, with the finest natural advantages in the world, is obliged perfunctorily to depend upon the impetuous visits of the huckster for the sale of her immense surplus stock of what she has only to thank herself for being pit fruit and pot fruit.

As I must hurry on, I feel, to bring my paper to a close, I will only give you a list of the most celebrated of the historic varieties of Apples, making a few remarks afterwards chiefly as regards the nomenclature and varieties of those oldest, best known, and valued.

The Joan or Juneating and Margaret, the Pomeroy, the Cat-head and Costard, the Winter Quoining or Queening, the old Pearmain, the Russet or Royal Russet, the Lemon or Quince Pippin, the Golden Pippin, the Nonpareil, the Befging and the Margil; and among cider fruit the Red Dymock, the Forest Styre, the Royal Wilding, the Redstreak, the Woodcock, the Foxwhelp. This list, I believe, includes nearly all that may be styled the historic varieties, some flourishing, some lingering on to the present day.

The etymology of the Joametting or Juneating Apple is so singular and decides the names of so many other Apples and Pears, that I shall not apologise for selecting it. It is one of the oldest and earliest bearing Apples, hence the mistake about its name being Juneating, in allusion to its maturity at the end of June or July. Dr. Hogg traces its name to Joametting, because its Apples ripened about St. John's day; and for a similar reason the next Apple I mention, the Margaret Apple, derives its name from St. Margaret's day, the 20th July, when this Apple would be in season. The Costard is one of the oldest of our English Apples. This variety is actually mentioned by name in a fruiterer's bill in Edward I's reign in 1292, as previously alluded to; and although now almost extinct, still used to be so common that retailers of it (even the very price mentioned at 1s. per 100) were called costard mongers, a name in popular use now in the word costermonger. Some etymologists, including the great Dr. Johnson, consider the name Costard to be derived from *cost*, a head, but how it is hard to say or rather to see. Dr. Hogg traces the name to *costatus*, *anglice* costate or ribbed, on account of the prominent ribs on its sides. The Quoining or Queening Apple is an old Apple, of which we have many varieties in Herefordshire (notably the Cowarne Quoining, a most valuable Apple) which were excellently and numerously shown at our pomological exhibition. The name Quoining may be traced by the angularity of the shape of the Apple, similarly as in the Costard, from the word quoin or coin, the corner-stone of a building. The Cathead is another very old Apple still grown amongst us, but chiefly I have noticed in cottagers' gardens, where it is gradually giving way to the Hawthornden and Lord Sunfield,

especially in Hertfordshire. Phillips sings its praises thus—"The Cathead's weighty orb enormous in its growth." The Old or Winter Pearmain must by no means be omitted. It is the very oldest historic variety we have. In Bloomfield's history of Norfolk, as quoted by Hogg, there is curious mention made of a tenure in that county by petty serjeanty and the payment of two hundred Pearmains and four hogsheds of cider of Pearmains into the Exchequer at the Feast of St. Michael. The origin of the name is equally curious. In early historical works of the same period Charlemagne is written Charlemaine, the last syllable as Pearmaine; and as Charlemagne was derived from Carolus magnus, so Pearmaine is derived from Pyros magnus, the Great Pear Apple, in allusion to its pyriform shape. The Lemon or Quince Pippin is mentioned by Ellis in 1744 as so good an Apple for all ages that many plant this tree in preference to all others. I know a nurseryman in my very neighbourhood who has several trees of this variety in wonderful bearing, but he says he could sell twenty times the quantity he has to different nurseries, where, owing to its brisk and refreshing taste, it is a special favourite.

The Golden Pippin, although of the greatest antiquity, has very little early history. It is not the Golden Pippin of John Parkinson, because he speaks of it as a large variety. Evelyn, in his Pomona, states that Lord Clarendon had in his time at his estate in Berkshire an orchard of a thousand Golden and other cider Pippins, but no allusion is made to it as a dessert Apple. The Margil is still grown successfully in Hertfordshire. It is said to have been originally introduced from Versailles in 1750. This Apple was shown very nicely at our last pomological exhibition. In delicacy of flavour it is unsurpassed, but unfortunately it is a shy bearer, owing chiefly to its blossoms suffering from frost more than any other Apple. The last, although one of the earliest historic Apples, I shall mention is the Pomeroy or King's Apple. This Apple is of extreme antiquity, very little is known of its early history. In Hogg's "Fruit Manual" (a work most judiciously added by Dr. Bull to the Free Library), and from whose descriptions I have largely borrowed, two distinct varieties are mentioned in use nearly at the same time, but differing altogether in shape, flavour, quality, and colour of flesh. I take particular interest in this old and highly valuable variety, because in my parish we have three or more very old trees still flourishing, and I was glad to see this Apple shown from many parts at our late exhibition. The original variety of Pomeroy still bears very fine juicy and delicious fruit in September, but which very soon perish; indeed last year many Apples decayed while hanging on the tree. This undoubtedly would be the Pomeroy of Somerset mentioned by Hogg, though he puts back its season too late from October to December. Now I was shown, indeed I tasted, a fortnight ago a specimen of the second variety, the Pomeroy of Lancashire, which had been bought in the Hereford Christmas market under the pseudonym of the Green Blenheim. This cannot be the true Pomeroy, as this variety does not answer at all to the description given it by the old writers neither seasonably nor structurally. I was pleased to find in Foreyther, who wrote his treatise in 1810, that this is only a late variety of the true Pomeroy. He describes it as the Winter Pomeroy, a good baking Apple and keeping till January. I should say this might be a variety of the true Pomeroy promiscuously crossed with the Nonpareil to one of its many varieties, as it bears strong resemblance to this Apple.

The most interesting of our cider historic Apples which may be considered as existing now are the Dymock Red, the Royal Wilding, the Cowarne Red, the Thyme's Kernel, the Forest Styre, the Underleaf, the Woodcock, and the Foxwelp. Of these varieties I will only briefly say that the Dymock Red is either a different Apple altogether or altered strangely in character. Now it is one of our earliest and best cider fruits in the Ledbury district, while in Forsyth's time a Dymock Red similar otherwise in description kept from January to March.

The Royal Wilding also demands a special notice. It is one of our best cider fruit, and I always thought that Hertfordshire had the credit of raising it until unobserved by Dr. Hogg, who claims that honour for Devonshire. Now, I find in old Barry Langley so different a plate altogether of the Royal Wilding in his time to what it is now with us, that I must consider them two distinct varieties of Apples until disproved by seeing a specimen of this fruit in the autumn from Devonshire.

The Woodcock is extensively grown in several parts of

Hertfordshire. The trees that I have seen are generally pictures of healthiness and fecundity, while the fruit bears the undoubted characteristics of the original species in structure, especially as regards a curious enlargement on the side of the fruitlets. Still the cider now-a-days is miserably poor—thin and whelp-like, and not at all in keeping with the high reputation it held among writers in the seventeenth century.

Of the Forest Styre I have failed in obtaining any history whatever. It is mentioned by the oldest writers, and its praise extolled to the skies when grown on light and chalky soils. It is an early sort, and the strength of its cider immense. I am told grafts from the old trees canker soon and perish sooner or later; while the cider made now is harsh and has lost all that charm of flavour for which formerly it was so celebrated.

With the Foxwelp this is not the case, I mean with the original trees. If fruit only can be had the flavour or gust is most pronounced; but from any other trees than the original this flavour is barely perceptible. With this piece of information I come to a full stop. Evelyn dismisses the Foxwelp in a single line contemptuously "as making a cider that requires two or three years to come round." Can I with any sense of self-respect or in common justice believe to the last and dismiss hurriedly our prince of Apples, the sole survivor in the race of time—our highly-flavoured fruit, that like Shelley's flower is dying of its own sweet loveliness, and like the expiring swan is singing only in its death? No, we orchard lords of Hertfordshire, as represented by the Woolhope Club, mean to pay the highest tribute in our power, and to make its fame immortal by allotting to the Foxwelp Apple the pride of place in the first number of our standard Hertfordshire Pomona; while as to myself I will not, I repeat, insult a time-honoured lichen-shedded giant by giving him now a beggarly passing notice; but thanking the company for their attention, will leave to some brother member the high privilege of reading a special paper in honour of the Foxwelp, on its longevity, its specific untransferableness, and its unrivalled power in the words of Evelyn speaking of all good cider, "in soberly exhilarating the spirits of us hypocondriacal islanders."

WOOLLY APHIS AND THE AURICULA.

I OBLIEVE to say that I must be added to the list of sufferers by this pest, the existence of which, as far as the Auricula is concerned, I was utterly ignorant of until the letters that have lately appeared in the Journal attracted my notice. I had been much disappointed with the appearance of some of my plants after top-dressing. They did not move with accustomed vigour, and as the loam which I used had been laid up for some years I concluded it was at fault, but against this was the fact that some of the plants were as fine as usual. When the letter of "A. S." appeared in last week's Journal I thought me, Can I have this plague? and so in fear and trembling I went to my frames. The first plant I examined was one of C. J. Perry. I turned it out carefully, and alas! all along the roots which had well filled the pot were the white woolly threads, which I am afraid must be it; if so, my failure is to be accounted for. I know not what to do. To turn them out of their pots now would be, I fear, hurtful, and would spoil all my chance of a bloom (now I fear but a poor one), and yet if I leave them alone I am afraid of the effect on the plants. Need it be said that I feel this to be a great calamity? We are about to have a grand tournament in London, and, although the owners of "the large battalions" in the north are coming with force, I should like to have been in the *melée*, and still hope to be in a small way; but this will very materially hamper me. I am in a difficulty here for shade, and during the summer place my frames under a hedge near which are some old Apple trees, and I fear it is from them I must have the pest. These insect ravagers are most mysterious. I have grown Auriculas for forty years on and off, and yet I never heard of such an enemy as this before. It is not alluded to in any writings on the flower that I am acquainted with, and all at once we hear of it in various directions; and the beasts cannot certainly have communicated one with another, and said, "We have had enough Apple diet for some time, suppose we go in for Auriculas." We unfortunate sufferers are indeed to be pitied.

While writing of garden pests will you allow me to say that the trustful gentleman who said that red-leading Peas was a complete protection against mice is a gay deceiver? at least the Kentish mice are above being stopped by such mean devices. My first sowing of Emerald Gem was well red-loaded, but not.

witstanding this not only have the mice been at them, but I found some of the Peas still retaining the red on them carefully laid up in a corner of my Auricula pit, ready for another meal. I must now try paraffin. Is it to be used pure or diluted?—D., Deal.

THE ANCHOR-FOOT STANDARD FOR WIRE FENCING.

Wire fencing is an article which is so much used in the partition of parks, pastures, and moors, that the mode of fixing it is of the greatest importance. Next to strength, the mode of fixing it in the ground is the consideration most to be attended to. We some time ago had brought to our notice a standard manufactured by Messrs. A. & J. Main & Co., of Queen Victoria Street, E.C., which we have found by experience to be very effective. It is represented in the accompanying engraving, and it is distinguished by the name of the

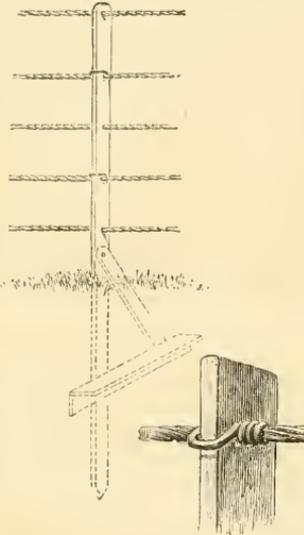


Fig. 21.

"Anchor-foot standard." We have used it rather extensively for separating pastures and as boundaries of farm roads where there are no live fences, and we feel ourselves justified in speaking of it in the highest terms. Its power of resistance to cattle is perfect. In our own case the standards are 9 feet apart with six and seven lines of galvanised wire, and this we have found so strong as to resist the charge of a young horse, which when first turned out rushed up against it, ignorant of its existence. Notwithstanding the force directed against it, not more than two of the standards were displaced, and that not more than 6 or 7 inches out of the perpendicular. With such a test as this it is with confidence that we recommend the anchor-foot standard for wire fencing.

TEA ROSES.

My experience in growing Tea Roses is somewhat different from that of "A YORKSHIREMAN" on page 81. I find that here, a few miles on the west side of Lincoln, on a light dry soil, I cannot by "A YORKSHIREMAN'S" method keep my Tea Roses through an average winter. I always take them up at the latter end of October and lay them in under a south wall, putting a little dry fern amongst them if the weather becomes very severe. I take care, however, to remove the fern or any other protection as soon as there is a change of weather, as I believe the want of a free circulation of air among the branches for any length of time is almost as destructive as the frost.

As soon as I have taken up the Roses I dig a quantity of

good pig manure into the ground (an east border), and dig it over again a week or two before I replant in the beginning of March, and I take care, as soon as I can, to mulch the newly planted Roses with grass cut from the lawn. I lose very few, and in due season am richly rewarded for all the pains I take. I have only half-standards at present, though I have laid-in a stock of seedling Briars, from which I am hoping great things if I can only manage to work them. As I have no glass, and cannot raise any Tea from cuttings, would that "WILD SAVAGE" or any other of your correspondents show me how?—J. E. D.

I THANK the Rev. J. B. M. Camm for his practical and genial notes on Tea Roses, also for the complimentary way he speaks of Leek and its rosarians. They are truly enthusiastic and deserve the praise bestowed by Mr. Camm, and I am sure his advice will encourage us in the attempt to cultivate these beautiful flowers, and I hope we shall be able to report favourably next autumn of our success. I wish they were like that hardy free-flowering Gloire de Dijon, for at Pickwood Hall, the residence of William Challoner, Esq., not a mile out of Leek, were cut on the 13th of January eight perfect blooms of that Rose, and there are several fine fresh-looking buds, which if the weather continues open will be flowers shortly. Will any of your correspondents kindly say if they have seen anything so unusual in the month of January? I ought to say that Pickwood is belted by well-grown forest trees and shrubberies except to the south-west, which looks down a delightful valley—exceptionally favourable. I might also mention that the Clematis is in bloom, and not more than five weeks ago I saw Mr. Challoner with a flower of Rhododendron, which he had cut from a plant the men were removing.—S. EYRE.

OUR BORDER FLOWERS—EVENING PRIMROSES.

If the old saying, "that there is nothing new under the sun," does not apply to anything particular it must be to flowers, for they are ever new, and the more we see of their beauties and inhale their fragrance the more we enjoy them. *Oenothera biennis* is now so well naturalised in some parts of the country that only a pinch of seed requires sowing in our borders when the plants come up, and by simply leaving them alone we soon have Evening Primroses in abundance. The *Oenotheras* are an extensive family of border flowers, and were much prized in years gone by when bedding plants were not so numerous as they are now. We used to tend *Oenothera Drummondii* with care and employ it with good effect. The Dandelion-leaved *Oenothera taraxifolia*, with its monstrous white flowers, when pegged-down is a fine plant in the borders; but perhaps *Oenothera macrocarpa* has the largest flowers of the whole family. Many others, as *O. Fraserii*, *O. speciosa*, *O. glauca*, and *O. hybrida*, are all fine border flowers, many of them emitting a delicate perfume. The herbaceous kinds are increased by cuttings in the autumn and division in the spring. They like a moderately dry sandy soil and full exposure. Some one has said that *Oenothera biennis* expands its flowers just as the sun sinks below the horizon.—VERITAS.

THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, KENSINGTON.

THESE gardens occupy about twenty-three acres. They are a parallelogram in shape, surrounded by colonnades and covered arcades, and on the north side, in the centre of the arcades, is a very large conservatory. The gardens are laid out in the Italian style, planned with good taste, and eminently adapted for promenade by numerous intersections of grass and gravel walks, highly embellished fountains, basins, cascades, balustrades, vases of rich design, statues in marble and bronze, and numerous other embellishments; terraces, flights of steps, sloeves, and parapets; sloping lawns, and a variety of surfaces producing pleasing effects. The water for the fountains, cascades, &c., is supplied by an artesian well 400 feet in depth, and is capable of supplying a million gallons in twenty-four hours of a pure and soft quality suitable for the purpose of the garden. The artificial adornments are brought into harmony with the natural beauties of the trees and shrubs, and the various climbing plants twine round and between the balustrades, clustering on the tops and varying the height of the terrace walls in various styles. The arcades, sloeves, and projections from buildings are made supporters of climbing plants, softening down the sharp outlines of masonry.

The trees have grown to a size producing depth of greenness and breadth of shadow, and break the continuity of view, so that the eye cannot range over the whole space as formerly without being attracted to some pleasing forms of vegetation, and in all parts of the grounds there begins to appear that boldness of relief which only time could give. All the decorations of this garden are highly ornamental, and accord with the surrounding style and character of the buildings; and if well kept up it would become very popular, for it is well situated for fashionable resort and surrounded by residences of families moving in the highest society, and the garden preserves an open space in a district which has been fast closed-in by buildings in this fashionable quarter of the metropolis. A garden thus situated could not be better calculated for exhibiting good examples of the high art of horticulture.

All should again unite in fellowship to support the old institution that has done so much good service in its pro-

At this time (about 1818) the Society began the system of procuring seeds and plants from abroad, and distributing them to the Fellows. Plants were first sent from China by Mr. John Reeves, a zealous horticulturist, and by-and-by the Council began to send out collectors on their own account. The assets of the Society increased. The house in Regent Street, which for forty years afterwards was the focus of horticulture in Europe, was bought at the price of £4200. The subscription to the Society was raised from £2 2s. to £3 3s., and the admission fee from £3 3s. to £5 5s.; and in 1821 there were as many as 328 elections in one year.

Stimulated (some have said intoxicated) by this prosperity, the Society resolved to take a lease from the Duke of Devonshire of the present grounds at Chiswick, and abandoning the gardens at Kensington and Ealing, to concentrate all their operations there. The land consisted of thirty-three acres, and was leased at a yearly rent of £300 a-year, with a power

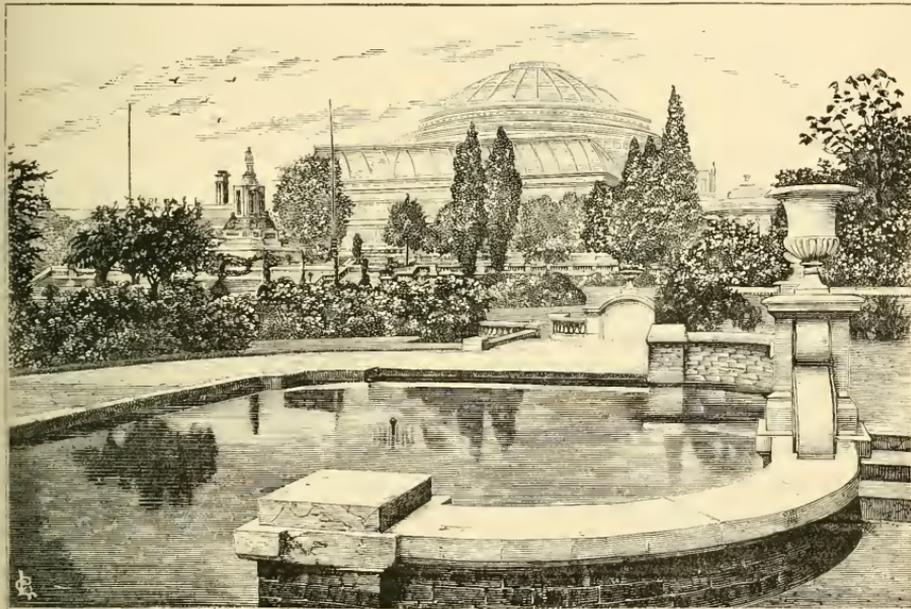


Fig. 23.—ROYAL HORTICULTURAL SOCIETY'S GARDEN, KENSINGTON.

gress of sixty-eight years, fostering and encouraging every branch of horticulture, the articles of necessity rendering the vegetable kingdom still more useful and more pleasurable. Certainly the Society has before been in cloudy circumstances and on the point of extinction, but then the good Prince Consort revived it; his influence restored its prestige, his plans which recruited its funds, and so enabled the Society to construct the garden and restore all to prosperity. Captain Fowke, Mr. Smirke, and Mr. Nesfield furnished plans for the garden, but it was the Prince who first suggested the ideas which they put on paper; it was he who examined the plans, altered, and corrected them until they gradually assumed their present form.

In 1818 it was thought the Society was in a position to warrant the establishment of an experimental garden. The income was £1791; the funded property £1400, and floating property estimated to be worth £3000 (a large proportion of which was, doubtless, arrears of subscriptions). An experimental garden was accordingly established at Kensington, with an auxiliary nursery at Ealing. The turn of events has again brought round a recurrence of the same conditions which existed fifty years ago. The Horticultural Society has returned to Kensington, near the spot where the old garden stood, and it has again its auxiliary nursery, only it is at Chiswick instead of Ealing.

of renewal for ever upon a fine of £450 every thirty years. At the end of the first thirty years this power was not exercised, and a renewed lease at the same rent was entered upon for another thirty years, with power to relinquish possession on giving one year's notice. This lease will come to a termination on the 29th of September, 1881.—N. COLE, Kensington.

KITCHEN GARDENING.

At the usual fortnightly meeting of the Darlington Gardeners' Institute the following practical and useful paper was read by Mr. MacIndoe of Hutton Hall:—

At the present time the want of a knowledge of the culinary garden is undoubtedly an ugly fact in connection with the rising generation of gardeners. This no doubt arises from one of two causes—either from want of opportunity or a disinclination on the part of young men to undergo the laborious drudgery of cultivating the soil. Journeymen gardeners who can very creditably stake a Heath, turn a large Azalea bush into a shapely pyramid, or neatly train a Peach tree to the wires, are frequently met with; but, whilst these things are all very desirable in their way, how seldom do you find a young gardener who can make an Onion bed in a workmanlike manner, and I hold that no man has a right to call himself a gardener until he is capable of making a neat and trim Onion

bed. Again, how rarely do we meet with a young gardener having any knowledge of the different varieties of either hardy fruits or vegetables; and I ask, How many are there who can name at eight say half a dozen sorts of Gooseberries or Strawberries? How many could at eight name three varieties of Peas or of Broccoli? This is, I think, a state of things which we all ought to try and remedy without further delay, as I can conceive nothing so humiliating to a head gardener as his being obliged to acquire a knowledge of kitchen gardening from those under him; and what can lower him so much in the estimation of his men as an inability to show them how to properly handle the spade or rake, arts which cannot well be learnt in after life? I would sincerely urge those who have not had the good fortune to be well trained in the kitchen garden during their apprenticeship to lose no time in placing themselves under some good practical gardener where kitchen gardening is well done, even if this step should involve pecuniary loss and a sacrifice of personal comfort. When a gardener enters upon his first responsible situation he should make it one of his first duties to take stock of the kitchen garden, and, having ascertained as soon as possible the requirements, likes, and dislikes of the family, he should arrange his crops for the following season, allotting as nearly as he can to each vegetable the proportion likely to be at his disposal, and taking care to avoid a glut or a famine at any time.

The following is the plan I adopt:—On some fine day in autumn I go round pocket-book in hand, and on one page I draw a rough plan of the garden, on which I affix a number to each border and quarter; I then number the succeeding pages to correspond, and proceed to allot the next year's crops to each plot, arranging what is to be dug or trenched, heavily or lightly manured. The south borders I consider most valuable, inasmuch as the earliest vegetables are always most highly appreciated, for which reason these borders should always be divided into several parts, of which the first would be occupied with early Peas sown about the second week in November, and which I consider a good crop to precede Strawberries for the following year. Allow me to remark in passing that notwithstanding all the high trumpet soundings about Alpha, Ringleader, Emerald Gem, Blue Peter, or William I., I have not found one Pea to surpass the old Dillistone's Early for the first dish. The adjoining piece of ground I give to early Potatoes, always taking care to have them well sprouted before planting; and for the first dish I have not yet met with any to beat the old Ashleaf Kidney, of which, however, there are many spurious stocks or so-called improved Ashleaf Kidneys. The true sort is easily known, as, when commencing their growth, they have smooth yellow sprouts with green points, whilst the bulk of the others have purple sprouts. In the remaining portions of the south borders places should be found for winter Onions, early Carrots, Turnips, Cauliflowers, Broad and Kidney Beans, Radishes, Lettuce, &c., and when these come off the land is usually in good condition for late crops of French Beans, Spinach, Turnips, Saladings, &c.

The east and west borders are always useful for a variety of crops unseasonal to those grown under more favourable circumstances, whilst the north border is valuable for late Strawberries, Turnips, Saladings, Parsley, Herbs, and many other things. I may remark that it is better not to occupy fruit-tree borders with tall vegetables or anything likely to injure the trees on the walls.

Turning now to the main portion of the garden, we shall have to determine how the quarters are to be cropped. In the first place, a good space must be set apart for Potatoes; and in my experience I have always found that, in addition to manure, Potatoes are much benefited by a little fresh lime being applied to the land at planting time, as, besides the good done to the land, the quality of the Potatoes is much improved. If the land has been recently trenched, and is in good condition after the second early Potatoes, fine crops of late Broccoli, Savoys, or winter greens may be had, and these in turn may be advantageously succeeded by Celery. The year following the main crop of Peas will do very well where the Celery has been, taking care to have the Peas where the Celery trenches were, as in this way the manure serves for two crops. The part of the garden allotted to Carrots, Beet, Par-nips, and Onions ought always to be trenched at least two spits deep some time during the preceding autumn, and well manured for the crop of Onions. The best time to sow spring Onions is so soon as you can trample on the ground without the soil sticking to your boots. I have for a number of years found wood ashes very beneficial to Onions, Carrots, Beet, and Turnips. When

the seed is sown I have the drills filled up with the ashes, the back of the rake is then drawn over the whole, and in due time the seed sprouts strongly through the loose surface, which never cakes, no matter how many showers there may have been in the interim, and, moreover, I never knew Onions, when treated as I have described, to be badly attacked with the grub so common in old gardens. Onions make a very good crop to precede Cabbages, as they are got off the ground early in the autumn, and the Cabbage plants get a good hold of the soil before winter sets in.

You will observe I have not said anything about such vegetables as Asparagus, Globe Artichokes, Seakale, or Rhubarb, which are so often found in back out-of-the-way places; these I consider most valuable vegetables, and they will well repay any extra labour bestowed upon them. Before making a new plantation of these be sure to have the land well manured and deeply trenched, and, with ordinary attention afterwards, success is almost certain. Such are a few general observations on the management of the culinary garden; and in conclusion I would beg to be allowed earnestly to impress on all young head gardeners to look well after the rotation of crops; to keep the garden clean and tidy; to strive at all times to have a variety of vegetables ready for the pot, and not to allow the salad-bowl to be neglected.—(Darlington and Stockton Times.)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

So far the birds have not done any harm to the buds of the Gooseberry bushes, which are now at that stage when they usually attack them. The weather has been mild, and probably green food of another sort has been plentiful. Pruning should now be finished without any delay. We generally leave Morello Cherry trees until the last, but they are now pruned and nailed. The buds on the north walls are starting. It may not be generally known that the Morello as a pyramid succeeds well on the dwarfing (Cerasus Mahaleb) stock, and it is possible to obtain fruit for preserving purposes, as it is not so much relished by the birds as the other varieties. The old Kentish exceeds quite as well on this stock, and they both make wonderfully vigorous growth. The trees have a tendency to become overcrowded with young wood, but this can be avoided by attention in summer, and if it was not thinned-out at that time it ought to be done at once. We have finished forking over the surface of all the fruit-tree borders. Many gardeners object to this operation; they believe that it is unnecessary if not positively injurious. In our light soil it is useful to give an annual dressing of manure, and if this is left on the surface the birds scratch it on to the walks, and the garden never looks in good order; whereas if the surface is merely forked over and care taken not to injure the roots with the fork, the borders look much neater. Should any weeds appear it is very easy to run the Dutch hoe through amongst the trees.

Gooseberry bushes require a good dressing of rich manure. It is not easy to overfeed them; and if the trees were infested last season with the Gooseberry caterpillar it will be as well to pare off the soil under the bushes with a spade to the depth of 3 inches, and trench it down 9 inches or a foot under the surface, bringing up the fresh soil to work under the bushes in the place of that which has been removed. The Lancashire growers plant their bushes on very highly manured soil, and they also give copious supplies of manure water, and by judicious shading and thinning of the fruit they get the benefit of such a size as has not been equalled in any other part of the British Empire.

When it is intended to regraft any of the Apple or Pear trees they ought to be headed-down in the early part of the winter; but if they were not done at that time they may be done at once, and grafting may be performed about the end of March.

The Strawberry quarters have again been hoed over. We are particular to have the plants quite free from weeds at this season and until the flowers open. If the heds are clean at that time there will be no danger of their being overgrown with weeds until the fruit has been cleared off.

CUCUMBER AND MELON HOUSES.

Those who grow the above in frames will now require to pay considerable attention to them. It will be necessary to cover the frames with mats every night, and should there be any symptoms of severe frost they ought to be doubled-matted. At the same time light and air must be as freely admitted to the frames as the state of the weather will permit. When the heat declines it must be increased by linings of stable manure and leaves. The plants will make but little progress in such a weather, and with the cold winds we have had recently it has scarcely been possible to give air. Where there are efficiently heated houses Melons that were sown the first week in the new year ought to be considerably advanced. It is not well to retain the

plants too long in pots, but at this season they ought to be fairly well established before planting them out. The best soil for Melons is good clayey loam, added to one-sixth part of decayed stable manure, and this ought to be trodden into the bed moderately firm.

We have planted out the Cucumber plants raised from seeds early in the year; they require rather more manure in the soil than Melons, and the temperature of the house ought to be 70° at night; while 65° is a more healthy state of the atmosphere for Melons. With the temperature of 70° a considerable amount of atmospheric moisture is necessary; but we have found that this may be overdone. In our house there are two evaporating troughs cast on the 4-inch pipes, and these two would throw off six gallons of water in a twenty-four hours. This was too much, as the plants never continued long in health, when both troughs were kept full of water. When only one trough is used the health of the plants is quite satisfactory. In an early Mascat house it was found that a large quantity of water evaporated from troughs over the pipes was injurious.

PEACH HOUSES.

The trees in the late houses will now be in flower, and with a night temperature of from 45° to 50° the fruit will set very freely. The trees may be gently shaken twice a day to disperse the pollen. In the early houses disbudbing ought to be attended to in time, as the trees are certain to suffer when too much growth is removed at one time. The fruit may also be thinned out in its early stages, allowing a small proportion to remain until stoning commences. It is needless to reiterate instructions about allowing only sufficient young wood to remain for next season's crop; this and instructions as to watering and destroying insect pests may be found in recent numbers.

GREENHOUSE AND CONSERVATORY.

During rough weather the owners of large gardens ought to find much enjoyment in their houses at this season, and a very small forcing house, with the aid of those flowers that are in naturally, will serve to keep a good-sized house gay all through the season. Camellias are adapted for the largest conservatory or for the greenhouse of the humble amateur, and they need no forcing. Cinerarias and Cyclamens supply cut flowers in abundance from Christmas until April or later with only sufficient heat to keep the frost from them. A few pots of Mignonette may be grown in any cold pits or frames, and be removed to the greenhouse when the flowers commence opening. The plants should have a sunny position, and be as close to the glass as possible.

Cuttings of tree Carnations have been put in in a house where the temperature is about 55° at night, and with a bottom heat of 85° they soon emit roots. It is not necessary so early in the year to shade them from the sun, but some loose squares of glass laid over them cause the moisture to be retained about the cuttings. The glass may rest upon the tops of the labels, or in some other convenient way. In selecting cuttings we avoid the large pithy growths, and select only the small side shoots. They strike well in a compost of equal parts of loam, leaf soil, and sand. When the cuttings are rooted the pots ought to be taken out of the bottom heat, and be removed to a cooler place, putting off the plants about two weeks after.

A number of small specimens of hardwooded greenhouse plants, comprising Cape Heaths, Epacris, Gemetyllia, Aphelxia, Boronia, Phacocoma prolifera, and other plants of this description that were repotted in August last year have now filled their pots with roots, and will be repotted at once. Heaths and Epacris succeed best in good turfy peat, with a little silver sand added if necessary. Most other Cape and New Holland plants are the better with a little turfy loam added to the peat. We are careful to use clean pots and to drain them well, placing some of the most fibrous portion of the peat over the pot-sheds. Potting ought to be done in a careful manner. It is no use trying to do such work in a hurry. Many of the specimens will have roots that are thoroughly matted round the ball; with a pointed stick these should be disentangled, and spaces left between the ball and sides of the pot wide enough to allow the fingers to be thrust down; a rammer made of deal ought also to be at hand, as the compost ought to be pressed down rather firmly. Each plant should also be rather moist at the roots before potting it, and must not be watered at the roots for four or six days after repotting. All such plants require plenty of ventilation, but it will be better to keep the house rather close, and shelter from cutting winds until fresh roots are formed. They will very soon lay hold of the fresh material.

We have propagated all the Chrysanthemums that we require, and shall be glad to wheel all the old stools out to the rubbish heap. Plants intended for specimens have been potted into 4-inch, and when these are well filled with roots the plants will be transferred to 7-inch pots. Chrysanthemums are hardy, easily grown plants, but to have them in perfection they must be potted in rich material. The plants must not become root-bound before they are shifted into the flowering pots. There are always a number of cuttings that fail to do well, and it is not safe to turn out the old stools before all the cuttings have started into healthy growth.

Cuttings of Phloxes were also put in; one cutting in the centre of a small pot. They soon strike roots, and when well established they are potted in 5 and 6-inch pots in rich loam, and are very useful for furnishing the greenhouse during August and September.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Robert Parker, Exotic Nursery, Tooting.—*Catalogue of Hardy Alpine, Herbaceous, and Aquatic Plants, Fruit Trees, &c.*

Walter Ford, Farmer, Basingstoke.—*Catalogue of English and American Seed Potatoes, and General List of Garden and Farm Seeds.*

H. Cannell, Swanley Nurseries, Kent.—*Illustrated Floral Guide and General Catalogue of Plants and Seeds.*

Abbott Brothers, Fairlaw, Southall, London.—*Catalogue of Hives and Bee Furniture.*

W. B. Rowe, 65, Broad Street, Worcester.—*General Seed Catalogue.*

William Parham, 280, Oxford Street, London.—*Trade List of Glass Structures.*

William Gibbins & Son, Oldfield Nursery, Altricham, Cheshire.—*General Catalogue of Plants and Seeds.*

Bruning & Co., No. 3, Beak Street, Great Yarmouth.—*Illustrated Descriptive Catalogue of Seeds, &c.*

Webb & Sons, Worsley, Stourbridge.—*Catalogue of Farm Seeds.*

James Backhouse & Son, York.—*Catalogue of Alpine Plants and Hardy Perennials.*

Ewing & Co., Royal Norfolk Nurseries, Eaton, Norwich.—*List of New English and French Roses.*

George Yates, 29, Little Underbank, Stockport.—*Descriptive Catalogue of Choice Vegetable and Flower Seeds, Gladioli, &c.*

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, so doing so subjects them to unjustifiable trouble and expense.

ROYAL HORTICULTURAL SOCIETY'S GUINEA FELLOWS (C. J.).—For a subscription of one guinea to the Royal Horticultural Society you can become a member and have the privileges of a Fellow of attending a meetings and shows of the Society. The only privilege you cannot enjoy is that of voting at public meetings, as you live in the country it is one which you probably care very little about.

VIOLETS IN FRAMES LIGHTED (M. H.).—We think the leaves are infested with aphid, for which fumigate with tobacco; or they may be attacked by mildew, which may be destroyed by flowers of sulphur, applying through a muslin bag to the under as well as upper surfaces of the leaves. Never have we known Violets do so well in frames as this winter. They are planted out, but your are in pots, which may account for the difference. Clear is not nearly so good as Victoria Regina; for one flower of Clear we have half a dozen in a similar space of Victoria Regina, and these larger and better formed.

SEEDLING ROSES (Peachfield).—Take the "bops" and break them to pieces with the fingers, and sow the seeds at once in pots well drained and filled to within an inch of the rim with a compost of turfy loam and one-third leaf soil or well-decayed manure. Having made the soil rather firm and levelled the surface, scatter the seeds evenly and cover half an inch deep with fine soil. The pots must then be plunged to the rim in an open warm situation, and watered with them in dry weather. In April they may be young plants may appear, though not infrequently the seedlings do not appear until a year after sowing. When three or four leaves (not calculating the seed leaves) have formed gently raise the seedlings with a long narrow-bladed knife, and then put in 3-inch pots and place in a cold frame, shading and keeping rather close for a few days. When established in the pots, as they will be in about a month, plant them out a foot apart in rich soil in an open situation. They will grow freely; some of them by the end of August or early September will have made shoots long enough for budding. Two or three stocks may be budded with each. Those which make strong shoots in the following year and flower the season following, but which do not branch, or very slightly. Any not having shoots strong enough to take buds from should be cut down to two eyes, and they will give shoots from which buds may be taken next year. Many would flower on their own roots in the third year, but the best varieties are rather shy bloomers on their own roots.

SEEDLING BRIARS (Idem).—Take up the plants (which appear this spring) in a hot bed, pricking off the seedlings in pans or boxes when large enough to handle, returning to the hotbed or to gentle heat, though they will do in a cold frame if it be kept close and shaded from sun, but gentle heat is preferable, removing the plants to a cold frame after becoming well established, hardening-off before planting out in May. Perilla may be sown early in April in a cold frame or slight hotbed. Perillae at the same time in gentle heat. The Perilla to be pricked off when the second leaves appear,

PLANTS FROM SEED FOR BREDDING (W. H. H.).—Calcocolaria for bedding, if you mean shrubby kinds, should have been sown in early August; but the herbaceous varieties may be sown now in gentle heat, and will flower in August, but they are not good "bedding plants." Lobelia, Petunias, Ageratum, Pentstemons, Pyrethrum, and Cerastium sown early in March in a hot bed, pricking off the seedlings in pans or boxes when large enough to handle, returning to the hotbed or to gentle heat, though they will do in a cold frame if it be kept close and shaded from sun, but gentle heat is preferable, removing the plants to a cold frame after becoming well established, hardening-off before planting out in May. Perilla may be sown early in April in a cold frame or slight hotbed. Perillae at the same time in gentle heat. The Perilla to be pricked off when the second leaves appear,

past years? It can be only done by all true fanciers working together. Secretaries, exhibitors, judges, pen proprietors, committees—all should enrol themselves members of one body and guarantee, come what may, as a body, to oppose malpractices. When such a company is formed and a protest has to be made, or something to be exposed, the name of no one individual must be given to expose him or her to the merciless attacks of the foe, but it must be done in the name of all and carried out by all. Once this is done and fairly started troubles would so diminish, and disqualifications would become so few, that the society would merely have to look out against their renewal, for in the face of a mighty party of all the loyal fanciers of Great Britain the opposing party would be crushed. A dozen names of gentlemen have been mentioned to carry out such a scheme. We give their names here in alphabetical order: Messrs. Atkins, Bissell, T. G. and W. A. Burnell, Cresswell, Dutton, Lingwood, Manby, Matthew, Pritchard, Tindler, and Wood. Among them are brothers of Polanda, Cochins, Dorkings, Game, Brahmas, and French, in fact all of our chief breeds. We ask fanciers who have the interests of the poultry world in their hearts to come forward and make these twelve gentlemen a committee. They were originally selected at random from a catalogue, and are members of no clique or party, consequently they are in every way suitable for the purpose. We repeat, let them be the committee and organise a meeting, arrange for the balloting of members, leaving out all they deem ineligible for any good reason, and let them try to take the matter into their own hands. They are gentlemen of the first fame, and no one can object to join their army under them as generals. Editors and proprietors of journals and managers of exhibitions cannot themselves do these things for the world is ever ready to ascribe to them, private or selfish motives; but exhibitors can themselves do it, and we hope to see it done. What is to be the peculiar badge or mark of membership we will not pretend to propose, but we do say the entrance fee should be small, for the expenses could not be great and all should be enrolled—everyone who has an interest in the cultivation of our feathered friends, from those with the income of thousands to the recipient of a few shillings a-week.

We would especially recommend the committees of shows to belong, even if they are holding only honorary positions and are not themselves fanciers, for they would be able to afford opportunities of checking by discovery nefarious practices, and give aid to the members and in prosecuting inquiries at their shows. In the face of the world is ever ready to ascribe to them, private or selfish motives; but exhibitors can themselves do it, and we hope to see it done. What is to be the peculiar badge or mark of membership we will not pretend to propose, but we do say the entrance fee should be small, for the expenses could not be great and all should be enrolled—everyone who has an interest in the cultivation of our feathered friends, from those with the income of thousands to the recipient of a few shillings a-week.

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Mr. Wallace Smith has done us a great good by getting all fanciers who were in favour of the judges' names being announced in the schedules to send him their names on a postcard; he then arranged them in order and published them, and the benefit has already begun to show good fruit. We should think some such arrangement could be done in this case. All in favour of some such association as has been proposed could send in their names and addresses on postcards to any one of the twelve named gentlemen if they will only hold office; and they can after a certain date, which can be determined upon, also arrange the names and publish them. And that all might know what they were sending in their signatures for we should suggest something like the following:—"The undersigned are in favour of all loyal fanciers forming themselves into an association for the purpose of exposing, and consequently suppressing, frauds at poultry exhibitions." Those then giving in their names could be balloted for by the committee, and so the matter would gradually be worked into shape. As we, however, said before, the larger the number that join the more hope is there for real and permanent success; and consequently we ask all those who have the interest of their hobby at heart to talk this matter over very seriously and see if they cannot come to some determination to arrange the matter to the satisfaction of all, and to the exclusion of no genuine fancier whether it be of poultry or of Pigeons.—W.

THE FORMER BOURNEMOUTH SHOW.—A lady exhibitor thus writes to me:—"The Bournemouth Show was held in February, 1876, and I there took a second prize. After many months had elapsed (quite six I should say) I wrote to the Secretary,

but received no answer to any of my letters. I then wrote to the Treasurer, and from him I received a most courteous reply, saying that he was astonished I had not received my prize money, and that he would write to the Secretary. My solicitor also wrote. The answer then came that he had no money. Doubtless there are many sufferers equally with myself, and I think we should join together and get some redress. I certainly think that before they get up another show, as I see they are about to do from 'our Journal' of last week, they should pay off old scores." So far the lady. Permit me to add that surely this is a very disgraceful case. Nothing is more calculated to ruin shows than such proceedings. Exhibitors doubtless will remember the proverb, "Once bitten twice shy," and be very shy indeed of showing at Bournemouth. Perhaps the Secretary may be able to clear up the matter and put all straight.—WILTSHIRE RECTOR.

AQUARIUM POULTRY SHOW.

BEFORE criticising the classes we must speak of the faultiness in the arrangements. It is no good to cloak matters, and had the Show been a local or country one long and loud would have been the outcries. It seems hardly credible when the Show opened on Tuesday at 2 P.M., that on Wednesday at the same hour, twenty-four hours afterwards, not only were the cards not up in very many classes, but it was impossible to find out the winners. We had to send news to distant friends, and could not find out who had won. It is ridiculous for the Committee to say that the push was so great that they could not get the work done, for the Show after all was only a moderately-sized one. We have had to help in the management as far as we could, and also and we think that the cards could have been placed on the pens at a much earlier hour. A regular *bouleversement* happened, too, among the classes each Judge was to adjudicate upon, and after Mr. Tegetmeier was announced to judge the poultry we cannot see why he was put to the Pigeons. Then many birds fought terribly for want of proper pen divisions, and exhibitors on Tuesday were seen running here and there with food and water for their neglected birds. These things combined will, we should think, make many shy of sending to this Show again under the same management. It is a sad pity, for the room is so well and evenly lighted, and the place itself so convenient of access. We are sorry to have to grumble so much, but the things we complain of were on everyone's lips. We believe the birds were speedily dispatched at the close of the Show which was that remaining point—as we hear of many who received their birds home in excellent time.

BRAHMAS.—Dark (cocks).—This was a poor class. The third-prize bird we considered in many points the best, but he has an ugly white patch on his breast, which doubtless lost him the first honour. We were very much surprised that we did not see Mr. Lingwood's name in the catalogue. Hens a much better class. First a beautifully pencilled pullet, rather small and deficient in cushion. Second and third large well-marked hens. Light, in spite of their four prizes and the good money value, failed to make a better show than Dorkings, Spanish, or any other less favoured breed. The cup went to Mr. Horsfall. We candidly confess we did not care for the award, and we feel sure he is not the champion bird, for he has neither the width, shape, nor feather of that cock. Our own choice was for the first prize bird, and if the fourth had even had the first prize we should not have said a word. These were two good birds, shapely, large, and well feathered. Second we did not fancy either. He had not the shape we like for the breed; he had, too, an immense tail, and we did not like his colour very much. Hens we thought on the whole carefully placed. First was a large bird but pale in head and looking a little out of condition. Second was the pullet which was protested against at Wolverhampton. She is undoubtedly a pullet, and a grand one to. Third was an excellent hen, large and good in shape; while fourth went to a capital bird, but too dark in hackles for our taste, still a finely-shaped bird. Mr. Leno sent a beautiful pullet which, perhaps, ought to have come in somewhere. Mrs. Tindal's bird, too, was shapely, but seemed quite ill and out of condition. In the £5 5s. class a well-shown pen came in first, but we noticed no very striking pen, and should consider the class a failure, there only being nine pens for the £5 worth of prizes.

SPANISH made two excellent classes, and Mr. Howard was very happy we thought in his selections. In cocks the winner was a good bird; his comb was capital, and his lobe fine and open. The second also had a beautiful face, but seemed a little high in the tail. We even thought he was a little round in the back, but the Judge told us he had handled him, and that this was not the case. Third went to a good cockerel, well shown and large in lobe. The hens made a fine collection of face and comb. She pens. The first was a superb bird, good in face and comb. She was shown in lovely form, and would probably have had the cup had it not been for a small fold on one side of her face. Second and third went to fine pullets, well shown and well

plac'd. Mrs. Allsopp's bird in pen 261 was a remarkably good hen, but she had a small piece torn on one side of her face, which kept her, we suppose, out of the prize list. The Spanish cock went to the cockerel.

FRENCH made but small classes. *Houdan* cocks were poor, and we did not see a comb in the class we really liked. Hens were much better, and Mrs. Vallance scored another triumph for her grand old hen, which, as we have before stated, is our *beau idéal* of Houdan markings. Second was also a well marked large hen, as was the third, but the latter did not look quite so bright as the first prize bird. We were sorry to notice that the Rev. W. Pearson's cockerel had had his tail injured, apparently by having the chief tail feathers cut right across in the middle. In *Criève* cocks the first won easily. He is lustrous, large, and well shaped, but poor in head. Second was a good bird, but not so large as the first. *Criève* hens only numbered six. The first good in shape and size, but not very pretty in crest. Second and third were fine hens, but not in their best looks. Miss Arnold sent a slate-coloured hen, which was good in points, and we thought deserved some notice.

GAME had six classes and eighteen prizes, half of which and the cup were monopolised by Mr. Matthews. The cock was a fine old dark bird of splendid shape and bright colour. The chicken from the same yard, which won second, closely, however, pressing on his heels, for he was a stylish bird with capital crest and splendid feet. The first hen in *Black Reds* was a shapely bird, and good in colour. Of the *Brown Reds*, as a lot, we thought the cocks the most superior, but the winning hen was a fine one in hard feather. In the next cock class good *Duckwings* were first and second, while a yellow-legged *Pile* of quality won third. In hens the winners were all *Duckwings*. The first a pullet of much merit, sound in colour and in fine condition.

MALAYS with fourteen pens were a fine lot, first once more going to Mr. Lecher. The cock is a good one, but we fancied either Mr. Penny's or Mr. Stanley's hen before his companion. We liked too Mr. Brauford's pair. Mr. Joint sent two good pens, but badly of as good colour as the winners.

LEGHORNS had two classes, in which were seven pens of Browns and five of Whites—no very great matter. We thought in Browns the winning pair were the largest; they had good combs and earlobes; the second also were a smart pair. Whites were not quite so good, and we did not much admire the colour of the first cock, but in other respects he was a good bird.

ANDALUSIANS were moderate. Nine of the eleven entries belonged to Mr. Fry and Miss Arnold. We thought there was an inclination to high tails here as in Leghorns, but the winners were apparently well chosen.

SILKIES made a pretty little collection. The winners we liked much, and we placed them in that position before the cards came round. Second contained a sweetly pretty cock, but a poor hen; and third were but moderate in claws and crest, but had the pretty turquoise blue ears. The judging gave us the idea that combs on the cocks had been taken more into consideration than anything. We have always made a great p. of this feature, but we do not think for it claws, crest, and silkiness should be disregarded. Mrs. Holmes's highly commended pen was rather coarse or else good. Mr. H. Dean sent a pretty pair, but one bird had a crooked toe.

The Variety class was a good one, La Flèche winning first and Cuckoo Cochins second honours. There were also other good birds of this latter variety and another excellent pen of La Flèche. We saw, too, some Black and White Micoras and a pen or two of the "wild Turkey's" connections.

The Sale classes as a lot we thought remarkably poor. We noticed one or two fair Light Brahmas, a sound coloured pair of Buff Cochins hens of Mr. Darby's, and a good pair of White Cochins being the only good ones among all the three first prizes. The French Silling classes were but meagrely filled, but the fact is by now most fanciers have either disposed of or have eaten their surplus birds, and purchasers are mostly snited.—W.

DORKINGS.—Coloured good classes. Cocks—First and cup (Parlet) a well-shaped bird with good feet. Second (Barrell) appears to have been recently fighting, but the accident did not deprive him of his position, which we thought he justly deserved. Hens.—Parlet again first with a fine bird, second and third also good. *Silver Greys* a capital class. The competition between the first and second was very close. Tuir'd a nice pen. Cuckoos pleased us very much. Nine entries, nearly all good. The improvement that has been made in this variety during the last two years is very satisfactory. Whites a small class of five. The winners were an exquisite pair, and well deserved the cup.

COCHINS.—Buffs (cock).—First a grand bird, beautiful in colour and well feathered; second and third closely pressed by pens 62, 63, and 67. *Parlets* (cock) a moderate class. The prizes we awarded were justly distributed. Hens were superior to the cocks. Mr. Wood exhibited three splendid birds. The first was the largest and perhaps the best shaped; but the pullet in the adjoining pen (90) was much more clearly marked

on the breast, and equally as well feathered in the leg. Pen 88, the same owner, we also thought deserved a position. Whites were a very beautiful lot. Some little fault was found with the buckle of the hen in the winning pen, but we thought the Judge's awards correct. Blacks were fair. They appear to have found many new friends, and we trust the ensuing season will show some marked improvement.

We thought the HAMBOURNS very good classes as compared with the average standard of merit through the show. *Golden-spangled* (eight entries).—The cup went to the first pair in this class. The cock is a lovely bird in carriage; but part of his breast almost too heavily spangled to please us. Second a small and neat pair, very even in mooring; third a very narrow-combed cock with blueish lobes, and a hen somewhat mottled in spangling though bright. *Silver spangled* (seven entries).—First and second were two lovely pens, splendidly shown. The cocks' sickles were singularly well spangled, and their hackles beautifully white. The first cock was the best in carriage; but in some points we preferred the second hen. The third-prize pen contained a very fair cock, but his comb, we fear, not as nature made it; and a beautiful hen all round. *Golden pencilled* (twenty-one entries), a capital class. This is now everywhere the best and most-filled class of Hambourgs, we fancy because they are so much more easily bred to than the first pair in this class. The cock is a lovely bird produced from the same pen if only judiciously mated. The first cock was neat in head and even in colour, but with ugly bars across his sickle; the hen evenly marked on a good ground colour. Second a good cock, and a hen rich in colour but rather coarse in marking. Third not a good pullet—badly marked on the breast; but a capital cock with a well-laced tail. Mr. Holdsworth's very highly commended pen contained a cock with fine carriage; and Mr. Crosswell's highly commended pen a very pretty pair all round. *Silver pencilled* (seven entries).—This variety is certainly at a low ebb. The only really good pen was the first, the cock of which had a beautiful tail. Second was a cock terribly out of condition, with reddish lobes but well laced tail, and a very fair hen. Third were not well shown; the cock had a good tail but bad comb. *Black* (sixteen entries).—These were most unfortunately placed, some of the pens being at one end of the building in a capital light, the rest at the other end almost in darkness. First was by far the most lustrous and green cock we ever saw, with very fair carriage; the hen pretty in shape but rather purple than green. Second a neat and good pair all round, but in the bad light. Third only a fair pair; the hen very bad in comb. Mr. Serjeantson showed two capital pairs, one apparently quite equal to the first-prize pair; but unfortunately they were pened after the Judge had gone round.

POLISH. *Golden-spangles* (seven entries).—The first pair were large in crest; but the hen's crest was almost white. The cock was, for the breed, in good plumage, with a dark tail, and his markings really incline to spangling. Second a cock with crest better in shape than the first, and a prettily laced hen; but generally inferior to the first pair. Third a cock with enormous crest thrown too far forward, and a hen too heavy in marking. *Silver* (four entries).—First a very nice pair; but we do not like a cock's tuft so much over in front. Second were a pair with very well shaped crests. *Black or any other variety* (eight entries).—The Polish cock won for Mr. Norwood's pair of Blacks first in this class. They are now well known and remarkable for their well-formed crests. Second another beautiful pair of Blacks; the cock has a splendid crest, and the hen is a perfect bird, though her crest does not seem to have fully expanded since the moult. Well it may not do so, as we believe she is eleven years old! Third Black again; the cock's crest a little rough in front; the pullet was, we think, the first Birmingham bird, with a splendid tuft for her age. One poor pair of Buffs put in an appearance.

BANTAMS.—Game, *Black Red* (fourteen entries).—The birds in this class were generally too large. The cup pen, however, were a lovely little pair, the cock capital both in style and colour. In the second pen was a cock not well dubbed and swelled about the head, with a hen far too dark; third were large; fourth pen contained the second best cock in our opinion, but a mosty hen. *Brown Reds* (five entries), were all large and not a good class. The second-prize pair were much the smallest, but the cock carried his tail badly. Fourth were good in carriage but very big. *Any other Variety* (nine entries).—First small *Duckwings* good in style, the cock's wing colour mixy; second *Pile*, the cock good, hen too large; third *Duckwing*; fourth pretty *Piles*, which we should have put higher. *Single Cocks* (ten entries).—First a beautiful little Black Red; second another equally good in form but much larger; third a fair *Pile*; fourth a *Duckwing*. *Black* (thirteen entries).—First a neat pair, but rather devoid of sheen; second rather big but good in gills and stylish; third large again, the cock very bright, but his tail feathers too broad. *Silbrihts* (ten entries), were not so good as we have seen them. The cup pair were *Silvers*; the cock very good, the hen too lightly laced. Second *Golden*; the hen a model of loveliness, but the cock too heavily marked. Third

Silvers, small and well faced. We suppose a little mousing on the cock's tail went against them, otherwise we thought them the best pair. *Any other Variety* (seventeen entries), were a capital and most interesting class. First a pair of White clean-legged, better than any we have seen for a long time. Second, White-foot-d, nicely shown. Third, a perfect little pair of Pekins; the hen, perhaps, was not quite so Coochin-like in style as the cock. Mr. Phelps and Mr. McCrae showed good pairs of Cocks, and Mrs. Holmes a pretty pair of Black-footed.

Ducks—*Aylesbury* (seven entries).—First a very large pair and not over-fat-l; second a good drake but a dreadfully fat Duck; third fair birds. *Rouens* (twelve entries).—The cup pair were a magnificent Duck and a drake which looked unhealthily in throat and bill; second a good pair; third a good drake and a Duck showing too much white on the wing. Mr. R. Gladstone's very highly commended and highly commended pairs looked healthy and fine. *Blacks* (fourteen entries).—First were very small and decidedly the best pair; second were large but very lustrous. We did not think the third so good as one of this owner's very highly commended pairs.

ORNAMENTAL WATERFOWL (seventeen entries), were a beautiful and most attractive class. The cup went to Mandarins, small and good in all their points. Second fanciest Carolinas, the Dorchester cup pen we fancy. Third the well-known Karkas or Paradise Ducks. Among the very highly commended were a pair of the new Pekin Ducks and small Egyptian Geese—C. The judging, we believe, was divided thus:—Mr. Tebbay the Game, Game Bantams, Sikkira, Malaya, and Hamburgs; Mr. Hewitt, Dorkings, Cochins, and Waterfowl; Mr. Nicholls, Dark Brahmas, French, Polish, Leghorns, Andalusians, and the Variety class; and Mr. Howard the remaining poultry classes.

PIGEONS.

HAVING spoken of the Show generally last week I now come to particulars.

Pouters come first, an arrangement which I have noticed to be on the increase, and I think these very tall birds deserve this position. Their pens are higher and wholly different in shape, and the formation of the bird is so peculiar that it, attracting the instant notice of non-fancier visitors, deserves the first place. *Blue pied cocks*.—First a bird of Mr. Fulton's (854), well shaped, but legs too forward and not over clean in plumage. S. second, 860 (Watkin), a good bird with wondrous long legs. Third, Fulton, No. 858, belonging to Rev. W. J. Burdett, was the best cock in the class, a pure Blue without a tick, and with a good bar, but he seems to be a pity thing. *Black and red cocks*.—First and cup (Wroct) a good style and a good shape, and superior in slenderness to the general run of Blacks. S. second another good bird (Fulton), but crop loose. Third (Fulton), a good all-round bird. Yellow or Red cocks.—First (Herrieff), a Red and very fine, with vast crop; this bird was all but winning the cup. S. second Mr. Fulton's Yellow, an old friend. Third a Red (Gill), the best Red as to colour in the Show, but deficient in crop: the colour with a good crop would win first everywhere.

Mr. Gill had also a large Yellow but somewhat thick; he deservedly had a v.h.c. *White cocks*.—A very good class indeed. First the best White Pouter now alive. Second (Baker) a thoroughly good bird; so, of third and of the four others noticed, *Pouter hens*—Blue pied.—First (Fulton) a very charming hen, bishoped on one wing and pretty playful; but, as if she knew her fault, kept the best wing to the front. Second (Baker) very good colour and half moon. Black pied hens.—First and cup a very elegant slender hen of Mr. Fulton's, very rightly placed. Second (Baker), over gay. Yellow hens, an excellent class. First (Fulton), good colour and crop. Second ditto in every respect save colour, it being red. Third a Yellow. Another Yellow, v.h.c. Mr. Baker had a very large-cropped bird, a Red, which had an n.c. *White hens*.—First Mrs. Ladd's White, which she may be gratified to hear is considered to have more than taken the place of the bird that died coming from Edinburgh. The Judges and fanciers agree in their estimate of the grandness of this bird. Second Fulton, third Baker. Mr. Heath's commended bird will yet do better. The Pigmies were chiefly noticeable in being Blue hens of the beautiful colours, one a Black pied and another a Blue pied, both good attempts and deserving praise for the pains and skill bestowed.

Carriers.—Champion class for cocks over one year; and mark, every one of these birds to be eligible for admission must have won not less than three first prizes of £1 each. Six birds were found equal to the occasion, and Mr. Eckroyd's bird with enormous wattle above and below stood, as he must stand, first. Mr. Maynard had the honour of breeding this Carrier. Next came the non eligibles for the champion class, being the Black cocks separated from the Duns. First Flicker; second Heritage, a good Pigeon; third Chandler. *Dun cocks*.—Cap Fulton, second Baker. Other classes followed, the Black hens being very superior; and the first Dun (Eckroyd) a particularly nice colour and with even flight. The young Black cocks were regarded as excellent. I believe the Judge wishes it to be known that he at first threw out Col. Hassard's birds, judging them not

bred in 1876, thinking them older; but afterwards he was convinced they were genuine young birds. These young class as were very good.

Dragoons.—An old and good fancy now revived and wondrously popular, a popularity which even Antwerp has not been able to effect. The great prizewinner of the day is certainly Mr. E. Woods. The most valuable prizes, whether I or Blues, Yellows, Silvers, Chequers fell to Mr. Woods both in cocks and hens. But readers must not conclude that his birds only were good, far from it. Almost every Blue cock was good; so of many Yellows. Indeed so even are the Dragoons now at large shows that only little points decide.

Short-faced Tumblers.—The Almonds were not very numerous and many of them did not please those close critics Almond fanciers; Mr. Eckroyd's cup cock and Mr. Baker's rich hen, first prize, excepted. The Shortfaces not Almonds was a little more numerous than usual, even in the Black Mottled class. Mr. Henning's two best birds, the cup and second prize, were very charming, followed well by Mr. Baker's third. Bald and Beard Shortfaces were fairly numerous. First Mr. Woodhouse, a Blue Bald; second Blue Beard, same owner; third a very rich-coloured neat Red Bald. Mr. Reddock had two good Black Bards, and Mr. Murphy a good Red. Among the other Shortfaces Agates were the winners, and Baker and Fulton their owners.

In Barbs the good old names of P. H. Jones and Maynard stood high. The former gentleman has been one of the steadiest fanciers of this class for a great number of years.

Jacobins.—Conceded that the one general remark may be made, viz., that the length of the chain feathers from back to front has visibly increased of late, but a little break in the top of the hood will make its unfortunate appearance still. Oh, that ugly gap! The cup Red cock was a charming exception. Second Red cock (Fulton), as good a bird save in hood. Third (Baker) short face and good long flights, quite the Jacobin shape.

Yellow cocks.—First (Fulton) very good, but not equal to Reds in hood, though not bad even in that point. Second (Frame) rather too loose in mane. Third (Heritage) very good. Blacks.—These will come too long-faced. First (Baker) small, neat and good flights; second good long bird, bad hood; third very good flights. *Jacobin hens*.—Reds: First (Fulton) neat and small, and yet good Jack points. Yellow hens: Cup (Frame) very exciting. Conceded that the one general remark may be made, viz., that the length of the chain feathers from back to front has visibly increased of late, but a little break in the top of the hood will make its unfortunate appearance still. Oh, that ugly gap! The cup Red cock was a charming exception. Second Red cock (Fulton), as good a bird save in hood. Third (Baker) short face and good long flights, quite the Jacobin shape.

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White cocks.—First (Fulton) very good, but not equal to Reds in hood, though not bad even in that point. Second (Frame) rather too loose in mane. Third (Heritage) very good. Blacks.—These will come too long-faced. First (Baker) small, neat and good flights; second good long bird, bad hood; third very good flights. *Jacobin hens*.—Reds: First (Fulton) neat and small, and yet good Jack points. Yellow hens: Cup (Frame) very exciting. Conceded that the one general remark may be made, viz., that the length of the chain feathers from back to front has visibly increased of late, but a little break in the top of the hood will make its unfortunate appearance still. Oh, that ugly gap! The cup Red cock was a charming exception. Second Red cock (Fulton), as good a bird save in hood. Third (Baker) short face and good long flights, quite the Jacobin shape.

Fantails.—Two divisions, English and Scotch. Former, cup (Maynard) was like a man with Scotch blood that will show. Others were regular large, flat-tailed English birds. The graceful little Scotchies have improved in fall of late. In fact the two nations have joined, and each are the better. A very pretty pair of Black Saddlebacks took a first prize in the other coloured class. Next to the White these are the handsomest Fans.

Nuns.—A little more numerous, and a Scotch fancier all the way from pretty Montrose deserved and won the first prize. Some of these birds were very dirty.

Trumpeters.—Mr. Hutchinson's magnificent Mottles won the cup; the best birds in the fancy.

English Owls.—The champion class, like all champions, small but so good. There were in all fifty-three English Owls to nineteen foreign. The former seem to be now the favourites, but I hope the latter will be cherished, for they are among the most lovely and are the smallest. *Pigmies*.

Turbits.—Blue, Silver, Red, and Yellow. The prize birds, especially Messrs. Eckroyd and Salter, very superior. In the small class of any other colour the first was a good Black and a pretty Pigeon, but with a head like a mouse. No. 1607 very superior in this point.

Maggies bid fair to be more numerous than the bird from which they take their name. Singular is the fate of Toy Pigeons. A very few get into lasting favour, many new birds come and soon disappear. Mr. Salter's Yellow cup bird was singularly good and neat. As good Msqs are shown of the three colours Black, Red, and Yellow, what a pity that a still older bird the Nun is not so fortunate.

Swallows and Archangels next. Mr. Long's first Red Swallow of a very rich colour; and Mr. Tedd's second, black in colour and very correct markings. With Archangels it is a case of standstill: pity this.

Runts, the aldermen of Pigeons, on the increase. Amusing very was it to see the big things cuddled up in handkerchiefs and pinned to the table. Not that they resisted, no; but they have easy tempers. "Is your little bipeds feathered or unfeathered

that are pappy. The very d serving, because infinitely amusing classes, Flying Tumblers, were large and good.

Balds or Beards.—First good, clean-cut, old-fashioned Black Bald, neat as wax. Second an equally old-fashioned Black Beard. Third a Yellow Beard. The Any other colour still better, but to get pretty birds and good colours there has been too much crossing with the Shortfaced. Judges! look out. Let this class be true to its name, not a mere resort for carelessly bred Shortfaced.

In the *Any variety* class Frillbacks now seem to predominate. A pair of those uncomfortable-looking birds Lace Fantails took second. I was pleased to see a pair of Turbintens, one being very good. Antweps, Short faced and Homing, followed, and two good Selling classes, £3 and £2 in price, followed, and a Flying class of Homers finished the Show.

I am inclined to think that all the printers in London and for many miles round were on the strike, for even on the second afternoon of this Show no prize list was printed—a thing that has never occurred during the fifteen years or so that I have attended poultry shows. It was a matter of relief to me to find that daily newspapers were still printed. Indeed, indeed, this late news was too late, for the London show does this and kindred faults will be avoided.—WILTSHIRE RECORD.

P.S.—Is it possible that the fish at the Aquarium were by mistake fed on Tuesday on the prize cards, and on Wednesday on the prize lists?

POULTRY.

DORINGS.—Coloured.—Cock.—Cap. F. Parlett, 2, T. C. Burnett, 3, J. Copples, Hen.—1 and 2, F. Parlett, 1, T. C. Burnett, 2, J. Copples, 3, W. A. Barnell, 4, W. R. Wren, 2, O. E. Cresswell, 3, T. C. Burnett, Blue of Cuckoo.—1, Mrs. H. Allen, 2, H. L. Playfoot, 3, Virgo & Son. White.—Cap. O. E. Cresswell, 2, R. A. Bonnier, 3, Miss Ashurst. Selling Class.—1, J. L. Lowndes, 2, G. Ellis, 3, Major W. Plimmer.

COCHINS.—Buff.—Cock.—1 and 2, G. H. Proctor, 3, Mrs. A. Tindal. Hen.—Cap. G. H. Proctor, 3, Mrs. A. Tindal, 2, W. A. Barnell, Partridge.—Cock.—1, A. Aspden, 2, Mrs. J. Hendon, 3, R. F. Povey, 4, J. Wood, 5, J. Wood, 6, W. Smart, Hen.—Cap. R. J. Wood, 2 and 3, E. Tindal, Hen. v. R. Wood. White.—Cap. R. F. Percival, 2, Mrs. A. Tindal, 3, A. Darby, Hen. v. R. A. W. Ward, 3, Mrs. A. Tindal, 4, R. F. Percival, 5, A. Darby, 2, A. Darby. Selling Class.—1, Mrs. A. Tindal, 2, H. W. Reville, 3, A. Darby, 4, Mrs. A. Tindal, 5, Mrs. A. Tindal, 6, J. F. Smith, 7, Miss E. C. Shuter, 8, E. Fitchard, Hen.—1, Mrs. E. C. Shuter, 2, Rev. J. D. Peake, 3, T. F. Ansell, 4, W. R. Garner, Hen. v. Rev. W. Pearce, J. F. Smith. Selling Class.—1, Mrs. A. Tindal, 2, M. Leno, 3, W. Jacob, 4, A. Comyns, Jun. Light.—Cock.—1, E. C. Horsfall, 2, F. Smith, 3, R. F. Broome, 4, R. F. Broome, 5, Hen.—1, J. Birch, Jun. 2 and 3, P. Hamae, 4, Miss Lae. Selling Class.—1, Mrs. A. Tindal, 4, J. Hamae, 3, W. Teed, 4, H. Mitchell.

WYANDOTTES.—Copper.—Cock.—1, W. C. Rogers, 3, E. Jones, Hen. v. J. W. Wynn Hen.—1, J. Boulton, 2 and 3, E. Jones.

FRENCH.—Houdans.—Cock.—1, G. D. Harrison, 2, Mrs. Wilson, 3, L. W. Thomas, Hen.—1, G. D. Harrison, 2, Mrs. Wilson, 3, L. W. Thomas, 4, Mrs. Wilson, 5, J. B. Brown, 6, W. Cutler, Jun. 7, H. Stephens, 8, J. A. C. Barrill, 9, J. Mackell, 10, J. M. Malen.

PERCEPES.—Cold-spangled.—Cap. G. J. Duckworth, 2, J. Rawnsley, 3, T. Deau, Silver-spangled.—Cap. G. J. Duckworth, 2, J. Rawnsley, 3, G. Percival, 1, C. Judson, 2, Miss D. Mackenzie, 3, Duke of Sutherland, Hen. v. J. K. Castell, W. K. Tinker, L. Holdsworth, Silver-pencilled.—1, Dr. E. Snell, 2, Duke of Sutherland, 3, Ferris Bore, Black.—Cap. W. Clarke, 2, W. E. George, 3, J. Ross.

GAME.—Black Red.—Cock.—Cap and 2, S. Matthews, 3, W. J. Pope, Hen. v. H. George Hen.—Cap. W. J. Pope, 2, W. W. Wadsworth, 3, G. Stapleton, Brown Red.—Cock.—1 and 3, S. Matthew 3, H. E. Martin, Hen. v. H. Martin, 2, W. Watson, 3, W. Watson, 3, W. E. Martin, Any other variety.—Cock.—1 and 2, S. Matthew, 3, S. Matthew, 4, S. Matthew, 5, S. Matthew, 6, S. Matthew, 7, S. Matthew, 8, S. Matthew, 9, S. Matthew, 10, S. Matthew, 11, S. Matthew, 12, S. Matthew, 13, S. Matthew, 14, S. Matthew, 15, S. Matthew, 16, S. Matthew, 17, S. Matthew, 18, S. Matthew, 19, S. Matthew, 20, S. Matthew, 21, S. Matthew, 22, S. Matthew, 23, S. Matthew, 24, S. Matthew, 25, S. Matthew, 26, S. Matthew, 27, S. Matthew, 28, S. Matthew, 29, S. Matthew, 30, S. Matthew, 31, S. Matthew, 32, S. Matthew, 33, S. Matthew, 34, S. Matthew, 35, S. Matthew, 36, S. Matthew, 37, S. Matthew, 38, S. Matthew, 39, S. Matthew, 40, S. Matthew, 41, S. Matthew, 42, S. Matthew, 43, S. Matthew, 44, S. Matthew, 45, S. Matthew, 46, S. 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LEOPARDS.—Brown.—1, S. L. Braubury, 2, A. Kellin, 3, W. Hitchcock, White.—1, E. C. Serman, 2, Mrs. W. Hughes, 3, Miss Handfield.

ANGLO-IRISH.—1 and 2, J. H. Fry, 3, Miss M. Arnold.

SILBYS.—1, Mrs. J. T. Holmes, 2, O. E. Cresswell, 3, W. Chandler.

ANY OTHER VARIETY.—1, H. Stephens, 2, T. Aspden, 3, F. J. R. Nunn, Hen. v. Joint (4), E. Brandford.

POLISH.—Gold spangled.—1 and 2, G. W. Boothby, 2, H. A. Clark, 3, A. & W. H. Silvester, Silver-spangled.—1 and 2, G. O. Adkins, 3, Miss P. Galloway, Any other variety.—Cap. R. Newbitt, 2, W. Bentley, 3, G. W. Boothby, 4, E. Sibley, Hen. v. J. F. Parker, 3, W. Bentley, 4, E. Sibley, 5, R. Newbitt, 6, W. Bentley, 7, G. W. Boothby, 8, E. Sibley, 9, R. Newbitt, 10, W. Bentley, 11, G. W. Boothby, 12, E. Sibley, 13, R. Newbitt, 14, W. Bentley, 15, G. W. Boothby, 16, E. Sibley, 17, R. Newbitt, 18, W. Bentley, 19, G. W. Boothby, 20, E. Sibley, 21, R. Newbitt, 22, W. Bentley, 23, G. W. Boothby, 24, E. Sibley, 25, R. Newbitt, 26, W. Bentley, 27, G. W. Boothby, 28, E. Sibley, 29, R. Newbitt, 30, W. Bentley, 31, G. W. Boothby, 32, E. Sibley, 33, R. Newbitt, 34, W. Bentley, 35, G. W. Boothby, 36, E. Sibley, 37, R. Newbitt, 38, W. Bentley, 39, G. W. Boothby, 40, E. Sibley, 41, R. Newbitt, 42, W. Bentley, 43, G. W. Boothby, 44, E. Sibley, 45, R. Newbitt, 46, W. Bentley, 47, G. W. Boothby, 48, E. Sibley, 49, R. Newbitt, 50, W. Bentley, 51, G. W. Boothby, 52, E. Sibley, 53, R. Newbitt, 54, W. Bentley, 55, G. W. Boothby, 56, E. Sibley, 57, R. Newbitt, 58, W. Bentley, 59, G. W. Boothby, 60, E. Sibley, 61, R. Newbitt, 62, W. Bentley, 63, G. W. Boothby, 64, E. Sibley, 65, R. Newbitt, 66, W. Bentley, 67, G. W. Boothby, 68, E. Sibley, 69, R. Newbitt, 70, W. Bentley, 71, G. W. Boothby, 72, E. Sibley, 73, R. Newbitt, 74, W. Bentley, 75, G. W. Boothby, 76, E. Sibley, 77, R. Newbitt, 78, W. Bentley, 79, G. W. Boothby, 80, E. Sibley, 81, R. Newbitt, 82, W. Bentley, 83, G. W. Boothby, 84, E. Sibley, 85, R. Newbitt, 86, W. Bentley, 87, G. W. Boothby, 88, E. Sibley, 89, R. Newbitt, 90, W. Bentley, 91, G. W. Boothby, 92, E. Sibley, 93, R. Newbitt, 94, W. Bentley, 95, G. W. Boothby, 96, E. Sibley, 97, R. Newbitt, 98, W. Bentley, 99, G. W. Boothby, 100, E. Sibley, 101, R. Newbitt,

to deprive a strong stock of bees of their stores. When the brickwork was cut away what a sight presented itself! One large flue, its diameter completely filled-up with enormous combs thick and heavy. This appears to have been the breeding space, for the bees had passed through a very small hole in a partition-wall and built magnificent combs in an adjoining flue, the greater part of the combs were filled and sealed-up. The man informed me their depth and breadth were such that as he cut them out and handed them down a ladder, he could only compare to "fitches of bacon." Another stock which had taken up their quarters in the roof of a thatched cottage was deprived of their stores about the same time, and was reached by cutting away the ceiling of a bedroom. The combs were taken out the outside of a brick chimney which passed through the roof and into the sky. There were supposed to have measured many of them about 2 feet by 2½ feet, and of great thickness, and as they were cut away were handed down and stacked into tubs, pans, dishes, bowls, and every available vessel to be found. Unfortunately the weights of neither stock are known, but the produce of the two could not have been much short of 400 lbs., and perhaps considerably more. It would appear to most common-sense people that these two stocks of bees were strong and healthy, and had abundance of honey at easy distance, and good weather to collect it, and plenty of store room. Will your correspondent tell us that this chimney-stack and cottage roof had "form, material, and construction" inferior or superior to the best hive ever made? While some talk of wood versus straw, why should not I ask, Then what about bricks and mortar if mere weight is all we have to consider?

Your correspondent seems singularly unfortunate in the shape and working of his skeps, and would have us (your reader I mean) believe that a glass only can be placed to super them, and that, too, in a very bungling manner. In all humility I would recommend a leaf or two out of Mr. Pettigrew's book to his notice. I can put on my large straw skeps boxes belonging to any hive, bell-glasses, or, what I prefer, straw supers 4 inches deep and from 8 to 18 inches over, flat-topped, very strong, and having a 3 or 4 inch hole in the top, which is covered with a piece of glass, then woolen, and a thin piece of board, to enable me to report progress when the bees are not wanted to go higher.

Your same correspondent on page 109 writes, speaking of convincing a straw hivist, "To be sure I had an advantage over him in possessing the Italian bee." Is this an advantage? I ask this of anyone who will kindly give the information through the Journal, because it ought to be settled in what respect they are better, equal, or worse than the common bee. A few years ago I had decided to give £5 for a good stock of Italians, and I went to Exeter to see the good Mr. Woodbury and his apiary, who very kindly offered me a veil. "What is that for?" I asked. "To put on your face; it is safer for both of us," he said. Then he proceeded to take out his bar frames, beginning with the Italians, pointing out all the little matters of interest. "See how these Italians sail about us," he remarked, as he held up their combs for inspection; not so the black bees, which we got next. These were examined in the same gentle and systematic manner, and exhibited their irritable temper a little, but nothing compared to what I have seen since when changing floor-boards. "Now, Mr. Woodbury," I asked, "will you be good enough to tell me in what respect are these Ligurians superior to the common bee? All things being equal, will they collect and store more honey?" "No," was the reply, and his emphatic "no" decided me. "Then in what way are they superior?" I asked. His reply was, "Only that they are less willing to use their stings." From that day to this I have never possessed an Italian, but should be pleased to do so if there is any good in them which the common bee does not possess. If that was the decided conclusion this great question had come to, where now lay their superiority?

One more important question I asked of this gentleman—namely, "Will bees collect and store a greater weight of honey in your bar-frame hives than in a common box 14 inches by 14 by 10, and supersed as required?" "No," was his answer; "but my hives may possess other advantages." Certainly, and thanking him very much I took leave of Mr. Woodbury, much pleased with the interview. I may mention that at that time all my bees were in boxes as above, Nutt's hives, and Stewarton, all of which I have still.—W. J. C.

CRUDE HONEY AND THEORIES.

Your esteemed correspondent the Vice-president of the Caledonian Apiarian Society was kind enough to publish in your number for the 14th December some notes of a visit he paid to my apiary during last summer, and he referred to the opportunity which he and the two keen entomological friends who accompanied him had of inspecting the procedure of the honey-laden bees as they arrived and deposited their loads in the comb cells of my observatory, which carried conviction to the minds of my friends of the unreasonableness of the "twice-swallowing and disgorging theory" which Mr. Pettigrew has maintained with

a pertinacity worthy of a better cause. There was a sectional portion of comb in the upper part running parallel to and wrought on the glass, thereby showing a half comb, the divided side being next the observer, which I had allowed to remain on as a special treat to my visitors. From its central backbone the cells were attenuated and carried out on either side to a depth requiring three and four separate divisions or "bulk-heads," to use a nautical phrase, and the marked contrast in colour of the different honeys stored in each, with the uninterrupted view of the head of each bee while discharging the secretion, elicited expressions of the greatest interest and delight from my friends.

To account for the difference of opinion on this and many points in the natural history of the bee, for the benefit of the general reader it becomes necessary to explain that parties who keep bees in domiciles with fixed combs are of necessity on such points in the dark, the hive being to them a sealed book, hence the tempting opportunity for the exercise of a lively imagination and the guesswork of fiction to set against fact. They deny the toiling labourers their well-earned repose; they suppose them busily employed during the silent watches of the night in moving about the eggs which the queen has improperly deposited, changing their sex by a process without a parallel in animated nature; and, heaviest task of all, removing to a different portion of the hive the entire gleanings of the day, and restoring it a chemically changed substance, robbing out little favourites of half their heaven-born instincts. These crudest of crude theories disappear like "the baseless fabric of a vision" when the bee-keeper advances from "fixism" to "mobilism." The precious truth is then laid bare.

The workers are never seen to "set" or move the eggs about, although rarely they may eat them when pressed by want. The queen does not drop them at haphazard; she thrusts her head carefully into the cell in every instance, and on satisfying herself on its thorough preparedness then deposits the egg, fixing it in position by that familiar half turn she never omits. The honey-laden bee is seen to carry the nectar of the flower right up without any intermediate resting-place for security to the super or uppermost portion of the combs, and hurry off for more till the cell is filled. Then what follows? Is it moved to another portion of the hive? Never, there is no such superfluous waste of labour in the hive. It stands a time; the watery property (proportioned to the state of the atmosphere and weather) rises to the surface and is sipped off by the workers, and the final extraction made through that little central orifice of what I described three years ago as the "aqueous and aerial" properties, before it be hermetically sealed-up. When at that time describing the process as above, your correspondent Mr. Pettigrew pronounced my fact as unworthy of a place "at the top of the list" of theories; but fortunately its truthfulness was subsequently confirmed by a special experiment instituted by that most excellent correspondent "R. S.," whose graceful contributions to these columns are much missed by us all.

The separation of the watery element takes place somewhat after the style adopted by a clergyman's lady of my acquaintance, who, strongly suspecting some twitches of the iron-tailed cow in her milk supply, put aside a simple tumbler for a time, set it on a plate, and astounded her milkman at the door as follows:—"Here is your milk; if you intend to give me this quantity," pointing to the thicker strata at the bottom, "in return for my money, well, I'll just take it; and please allow me to flavour it with this," pointing to the water floating on top, "to my own taste for the future."

Many years ago I had an observatory stock placed in a staircase window, which stood much in want of feeding, and feed it I did with no stinted hand. Owing to its inside position and consequent warmth of the house they took down greedily. The exposure was from where

"Foreas w' his blasts did blow"

so vigorously in at the entrance that not a solitary bee dared venture abroad, placing my little favourites in a most unenviable plight with their loaded sugar-syrup combs. The wind chopped round at last, and the sun shone out brilliantly. The extracting process began with a vengeance—the pent-up prisoners came forth like a vengeance, and at their high altitude could be seen disporting themselves backwards and forwards over a bit of lawn like madcaps, at the same time emitting in long jet-like clear streams crossing and recrossing each other, which could only be compared to a sweetened shower.

I cannot close these remarks without impressing on the novice the great necessity for the careful keeping separate and distinct for running the unsealed from the sealed combs. The contents of the latter will consolidate and keep even at midsummer; that of the former should always be scrupulously kept out, otherwise the smallest quantity acts "like the little leaven which leaveneth the whole lump."—A. RENFREWISH BEE-KEEPER.

IN MEMORIAM.—We regret this week to have to record the loss of another poultry fancier. Mr. H. C. Dear, of North Stoneham Park, Southampton, has passed away from us. He was one of

the first introducers of condiment for live stock, and his prepared meal was as successful with cattle as poultry. He has been in failing health a long time, and when we saw him at the last Bournemouth Poultry Show we thought him sadly changed for the worse. We understand his business will be taken on by his widow, at the great wish of the deceased. Besides being the manufacturer of these foods, he was an enthusiastic poultry fancier, and possessed some of the best blooded Game fowls of the day.—W.

SCIENTIFIC BEE-KEEPERS.

“SCIENTIFIC bee-keepers” is a term I and others have often used; but how few there are who deserve the name. The “science” of bee-keeping is scarcely born. Look at the bee of our day. It is the same as sung of by old Virgil twenty centuries ago. Regard our cattle, our poultry, our fruits and flowers, and contrast them with the stocks of a hundred years ago. The difference is marvellous. Our great grandmothers would not recognise the pullets they trusted or the vegetables they cooked as articles of the same genera. On these things science has truly been brought to bear. Patient selection of the best individuals, ruthless destruction of the worst, judicious crossing, and introduction of foreign varieties have made the products of our farms and gardens what they are. Why, then, should not like results be obtained by “scientific” culture of the hive bee? The introduction of the Ligurian bee was a step in the right direction, but this was twenty-five years ago—rather a long distance from the first step to the second. However the better qualities of the Ligurian may have been exaggerated, and they doubts have been, yet few who have given them a fair trial will gainsay the assertion that the variety is an improvement on our old black friend. No new discovery, for does not Virgil say—

“The better brood, unlike the bastard crew,
Are marked with royal streaks of shining hue.”

The world is wide, and in it are many species and varieties of bees; it would be strange indeed if we have absolutely the best. A bee having equal or better industrious habits to ours without a sting would be a very desirable acquisition; next to this, one disinclined to use her weapon would not be despicable, and such a character is possessed by the “kraimer” or Hungarian bee, which is slowly spreading over Europe, and has also emigrated to America. I also have a kraimer queen gradually gathering her children round her, whose characters I hope duly to chronicle. Great things are said of a bee from the Isle of Cyprus. A few of the leading German bee-keepers have this variety, and it is highly prized and jealously kept. At the Apicultural Exhibition at Strasburg, 1875, a queen was exhibited and sold for 75 francs to a professional queen-breeder, who advertised her progeny for sale during the ensuing summer. But it is never wise to count chickens before they are hatched. The queen died, and numerous orders for her daughters were unfulfilled. I have a conditional promise of a Cyprian queen next summer. This bee is said to far excel the black and Ligurian in profiencess and industry, but not to be commended for amiability. In the country round the Gulf of Cattaro dwells a bee very hardy and muscular; were they not so they would starve, for they have to gather their honey from the flowers which grow in the crevices and ravines of the mountains—high, steep, and exposed to rough winds. Their character is good so long as they are not disturbed, but if meddled with they become most wicked, stinging viciously and painfully. Perhaps these would suit our mountains and exposed coasts, where our native bee finds it difficult to support itself. But is it presumption to say that a judicious crossing of such varieties as I have named (for they are all believed to be of the same species) would improve our breed and enlarge our honey harvests?

A “RENFREWSHIRE BEE-KEEPER,” Mr. Phillips, and others have chronicled the splendid results of individual hives, or I may say the extraordinary industry of cert in worker bees, the daughters of known queens who above others in the same apiary have distinguished themselves by the excellence of their progeny. Common sense would tell us that here is a proper case for selection: weed out the other queens, and replace by the better brood. Experienced hands, as our friends here named, would find no difficulty in stocking the hives of a village from a favorite queen. In America this principle is recognised and practised. There is a bee in India which builds long combs pendent from the branches of trees. I have not the account to refer to, but I think the combs were described by Professor Wallace to be 6 feet long. India, in point of time, is not a far country now. Perhaps one of our compatriots on his homeward trip will some day bring us a live queen of this species, and some among us may live to see the day when the scientific bee-keeper may proudly say, “Look on this picture and on that.”—JOHN HUNTER, *Eaton Rise, Ealing.*

OUR LETTER BOX.

FRONTINO CAROLINA DUCES (E. K. L.).—Pinning them does not quantify them for exhibition; unpinned birds are the exception. Almost

all fancy wild fowl must be kept pinioned, or they must be treated as caged birds and enclosed on every side and overhead with wire or netting. Even birds bred tame will fly away in the winter if they are full-winged. There always remains enough of instinct in them for that; but if they are pinioned they remain. If there were any condition to be applied to the exhibition of wild fowl it should be that they should be pinioned, as that is the only state in which they can be kept.

BAR-FRAME HIVES.—J. G. wishes to know the best maker. These hives should be advertised.

STEWARTON HIVE (J. H. Etridge).—There are no entrances allowed to Stewarton colonies, except at bottom of the hive, half inch deep and as wide as the dovetail will allow, a central and one in each division on either side, making three in all, fully open during the heat of summer. Three 7-inch boxes are ample sufficient; 12 inches of breeding space in ordinary cases unless. A hive without an entrance is as convenient as a house without a door at swarming time. Thoughtlessly set down on a temporary board or table suffices the bees. Windows back and front, as at present, show through the state of the very excellent hives. Queens are checked in non-swarming stocks ofteor than is supposed. Here they are always detroned at the end of the third season at furthest. No winter packing is required with outside cover. Your friend will lose all the advantage of the set-riying system in his projected hive. The yield of hives is dependant on season and locality. Here swarms in colonies yield nothing the first season unless doubled.—A. RENFREWSHIRE BEE-KEEPER.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.	
	Baromet. at Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Air in Shade.	Shade Temperature.		Radiation Temperature.		
1877.		Dry.	Wet.		deg. Fahr.	Max.	Min.	In sun.	On grass.	In.
Feb.										
We. 21	30.666	82.2	84.7	N. W.	46.9	45.3	35.3	70.9	32.4	
Th. 22	30.359	83.7	85.0	N. W.	41.1	31.1	21.1	62.1	32.7	0.110
Fri. 23	29.911	83.3	85.3	N. W.	40.5	44.9	33.6	91.6	31.6	0.100
Sat 24	29.672	41.7	42.0	N. W.	40.1	51.7	36.3	76.4	32.9	
Sun. 15	29.462	47.0	45.5	N. E.	40.0	54.1	42.5	83.3	41.8	0.008
Mo. 16	29.544	48.3	48.3	N. E.	44.7	42.6	39.4	76.8	32.3	0.048
Tu. 23	29.534	39.8	38.4	N. E.	45.0	40.0	31.8	68.0	32.6	—/—
Means.	29.696	39.8	37.6		40.5	45.3	35.7	73.3	32.7	0.316

REMARKS.

- 21st.—Fine all day till 3 P.M., but then dull; a very slight snow shower in the night, which was observed on the 22nd.
 - 22nd.—Fine morning, but dull afternoon; rain began at 1 P.M. and fell at times during the rest of the day.
 - 23rd.—Fine morning; dull but fair all the after part of the day.
 - 24th.—Bally morning, but clearing up by 11 A.M., and fine during the rest of the day.
 - 25th.—Fair, but dull in early morning; but slight showers at intervals all day after 10 A.M.
 - 26th.—Beautifully bright and fine at 8.30, but in less than an hour snowing heavily, but only for a short time; fine afternoon and bright moonlight night.
 - 27th.—Very slight white frost at 9; a slight fall of sleet at 10 A.M.; but bright, though cold during the rest of the day.
- A fine bright week, northerly winds and lower temperature.—G. J. SYMONS.

COVENT GARDEN MARKET.—FEBRUARY 28.

TRADE is again quiet, and scarcely anything doing worthy of note. Good late Grapes are getting into a small compass, and are the only fruit that commands a really good sale.

FRUIT.

	s.	d.	d.		s.	d.	d.
Apples.....dozen	4	0	0	Nectarines.....dozen	1	0	0
Apricots.....dozen	0	0	0	Oranges.....dozen	1	10	0
Cherries.....bushel	0	0	0	Peaches.....dozen	0	0	0
Currants.....dozen	0	0	0	Pears.....dozen	0	0	0
Black.....do.	0	0	0	Plums.....dozen	3	0	0
Figs.....dozen	0	0	0	Pine Apples.....lb.	1	6	0
Filberts.....dozen	1	0	0	Pineapples.....dozen	1	0	0
Golts.....lb.	1	0	0	Quinces.....bushel	0	0	0
Gonberries.....quar.	0	0	0	Raspberries.....lb.	0	0	0
Grapes, hothouse.....lb.	6	12	0	Strawberries.....lb.	1	0	0
Guavas.....dozen	1	10	0	Walnuts.....bushel	5	0	0
Melons.....each	0	0	0	ditto.....	1	10	0

VEGETABLES.

	s.	d.	d.		s.	d.	d.
Artichokes.....dozen	0	10	0	Mushrooms.....pottle	1	0	0
Asparagus.....100	10	0	0	Mustard & Cress.....pannet	0	2	0
Beans, Kidney.....100	1	0	6	Onions.....bushel	0	0	0
Beet, Red.....dozen	1	6	3	Parsley.....doz. bunches	2	0	0
Broccoli.....bushel	0	0	0	Peas.....dozen	0	0	0
Broad Beans.....dozen	0	0	0	Peas.....dozen	0	0	0
Broad Beans.....dozen	0	4	0	Peas.....dozen	0	0	0
Cabbage.....dozen	1	0	0	Potatoes.....bushel	2	6	0
Carrots.....bushel	0	4	0	Radishes.....doz. bunches	1	0	0
Cauliflower.....100	1	6	0	Spinach.....doz. bunches	0	5	0
Cauliflower.....dozen	3	0	0	Spinach.....doz. bunches	1	0	0
Celery.....bushel	1	3	0	Spinach.....doz. bunches	1	0	0
Celery.....bushel	0	0	0	Spinach.....doz. bunches	1	0	0
Cucumbers.....each	1	0	0	Spinach.....doz. bunches	1	0	0
Endive.....dozen	1	0	0	Spinach.....doz. bunches	1	0	0
Fruit, Foreign.....dozen	1	0	0	Spinach.....doz. bunches	1	0	0
Garlic.....lb.	0	8	0	Spinach.....doz. bunches	1	0	0
Herbs.....bunch	0	8	0	Spinach.....doz. bunches	1	0	0
Horse-radish.....bunch	0	0	0	Spinach.....doz. bunches	1	0	0
Lettuce.....dozen	1	0	0	Spinach.....doz. bunches	1	0	0
Leeks.....bushel	0	4	0	Spinach.....doz. bunches	1	0	0

WEEKLY CALENDAR.

Day of Month Week.		MARCH 8—14, 1877.		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.	
Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	
8	Tr	49.4	31.7	40.5	6	31	5	51	3	58	10	24	23	10	54	67				
9	F	49.3	30.9	40.1	6	29	5	53	4	59	11	29	24	10	53	68				
10	S	49.7	31.6	40.7	6	27	5	54	5	7	0	41	25	10	54	69				
11	SN	49.2	32.1	40.7	6	25	5	56	5	28	1	55	26	10	54	70				
12	M	50.6	32.0	41.8	6	23	5	57	5	43	3	8	27	9	51	71				
13	Tu	50.7	33.8	43.2	6	20	5	59	5	55	4	20	28	9	53	72				
14	W	51.1	34.7	43.9	6	18	6	1	6	6	5	39	29	9	18	73				

From observations taken near London during forty-three years, the average day temperature of the week is 50.0; and its night temperature 32.4.

PEACH FORCING.—No. 7.



As the period of the year has arrived when forcing operations are in progress this subject may be seasonably resumed. I will discuss it under four cardinal heads—moisture, ventilation, disbudding, and pruning.

MOISTURE.—From the closing of the house to the flowers expanding the trees are to be sprinkled in the morning and afternoon, except when the weather is very wet and foggy, it being better in such weather to damp the floor and every available surface other than the trees, which affords sufficient moisture and is infinitely better than keeping the trees dripping with water. The evaporating troughs ought also to be filled with water, and should never be empty from that day forward to artificial heat being discontinued. My evaporating troughs are equal to about half of the extent of the heated surfaces of the pipes.

After the first blossoms expand syringing so far as the trees are concerned is, until the fruit is set and swelling, discontinued; but the whole available surfaces of the house are sprinkled with water in the morning and afternoon, which with the moisture constantly being evaporated from the troughs secures all that is needful for the maintenance of the blossom, for if the atmosphere be very dry, no moisture afforded by sprinkling or from troughs, it is certain that the best results will not follow. "Oh, but a dry atmosphere is necessary for Peach and other blossoms at the time of setting," some may remark. If by a dry atmosphere is meant such as we have in an unheated house, or one only heated so as to exclude frost or during bright fair weather when the trees outdoors are in blossom, I agree in the definition of a dry atmosphere; but the moisture in such houses (though no syringing be resorted to) and outdoors is fully equal to that of a house sprinkled twice daily and with evaporating troughs constantly giving off moisture. We must take into consideration the altered circumstances of trees started in November or December and dependant from first to last upon a temperature maintained by artificial heat. Instead of the moisture in the latter case being injurious I am certain it might, when there are no evaporating troughs, little piping requiring to be highly heated, and bright weather prevailing, be advantageous to the setting to syringe the trees occasionally. It is moisture in a measure that supports the petals and feeds the stamens. It is dryness which contracts and moisture which expands the pollen cases, causing their bursting and effecting fertilisation. With a parched atmosphere the petals soon drop, the anthers are lean, and a good syringing in such cases is often beneficial. It is not now my practice to syringe Peach trees whilst in blossom, for with the moisture had from the troughs and the sprinklings, I have in the brightest and most severe weather the moisture required, and to syringe would be to convert the pollen into paste, hindering instead of furthering its dispersion. What Peaches need at setting is a congenial atmosphere,

most but not stagnant. If anything a parching dryness is likely to be more injurious than a moist atmosphere or syringing; but the main thing is to keep the atmosphere whilst the setting is taking place from being close—stagnated. That moisture is not inimical to the setting naturally of any of the order Rosaceæ may be inferred from so many having their parts exposed directly upwards as if to receive descending moisture—rain or dew. At the same time we cannot but admit water driven against the under surfaces of the leaves to be diametrically opposed to nature. It is not, therefore, so foreign to nature to syringe a Peach when it is in blossom as to force water twice every day against the under side of its leaves after the fruit is swelling. It is done, of course, to prevent red spider obtaining a footing—a hold that it will not let go until driven by a force it cannot resist.

After the blossoms are set I am not in a hurry to resort to syringing the trees, but wait until the fruit commences swelling and has attained the size of a horse bean. The house is nevertheless kept sprinkled with water twice daily, the evaporating troughs never empty; and I would not even then resort to driving water against the under side of the leaves had not experience taught that it must be done if the leaves are to be kept free from red spider. The syringing twice daily is resorted to after the fruit is fairly swelling, and is continued daily until ripening commences, and the house is then damped twice a-day, and the evaporating troughs are not allowed to be dry so long as artificial heat is applied.

A good syringing is given the trees after the fruit is gathered, and is continued every evening so as to thoroughly subdue the red spider; for upon continuing the foliage in a healthy state until the wood is completely ripe depends future crops. If there is no red spider there is no need of the syringes. In respect of the temperature of the water for syringing I have a preference for it of the same temperature as that of the house, but am only particular in this matter whilst the fruit is young, having often given a thorough downpour over the trees as well as against their under surfaces with water from a hose-pipe as much as 20° below the temperature of the house without experiencing any evil consequences. I do not, however, recommend the water used for syringing to be lower in temperature than that of the house.

VENTILATION.—When the first blossoms expand an opening of about half to three-quarters of an inch is given the whole length of the house at top constantly day and night whatever the weather may be, and as the whole of the front lights open and do not fit very closely, so that even when they are closed air will pass in in proportion to that escaping by the upper opening. This increase of air is regulated by the temperature, as has been previously alluded to. I do not agree with raising the temperature artificially for the mere purpose of admitting air in large volumes—that, in my opinion, being tantamount to "doing evil that good may come." All that is intended by ventilation is the prevention of a stagnant atmosphere on the one hand, and preventing the temperature rising too high on the other.

DISBUDDING.—This is resorted to, to prevent overcrowding and to give shoots at required positions, as well as to secure the extension of the trees; also to secure suitable growths for the support of the fruit, and to provide for producing future crops. If the trees are vigorous they will be ready for disbudding by the time the flowering is past. Some advocate pinching out the points of the shoots which have fruit at their base, and most growers agree that disbudding should be done gradually, removing part of the superfluous growths at one time and part at another. Any who are timid over disbudding will have many useless growths, which must afterwards be stopped or cut out. I cannot see the value of allowing shoots to grow which must be ultimately removed. I can understand the necessity of not disbudding all at once when the trees are against walls or in a cold house, where the foliage acts as protection to the setting fruit, and its removal in quantity at an early stage may cause the leaves to suffer severely from blight, an evil which I consider is entirely due to insufficient protection. I have never had a "blighted" leaf in a heated structure, and in such a house I do all the disbudding at once.

When the shoots are long enough to be handled I remove unflinchingly every shoot or bud not wanted. I practise the long-pruning system, though I do not find fault with short-pruning, but have a decided objection to the finger and thumb being ever kept at work upon Peach trees—a certain mode, as I have found it, of having lots of blossom, the fruit also setting freely enough, but much of it dropping very soon from an insufficiency of foliage and sap. Presuming that the trees are fan-trained, the main branches 9 inches to 12 inches distance apart, and the shoots upon them 12 to 15 inches distance and trained in between those branches, we have to remove the shoots on the under and upper side of the branches, and leave side shoots for training-in at 12 inches apart, and at about every 3 feet a shoot will require to be laid-in and trained so that it will be at a distance of 12 inches from the shoot it originated from. A shoot will also require to be left for the continuation of each main branch. The bearing shoots have all the shoots removed except one at the base, selecting the lowest in every case for retaining, and one at the extremity of the shoot or above the fruit; and this shoot, not being required for extension, is stopped to three leaves, and any growth it may make afterwards is closely stopped at one leaf. Any fruiting side shoots failing to set are cut away to the lowest bud of their origin for the production of fruiting shoots for next year.

The shoots trained in from the base of the current fruiting shoots are, if very vigorous, stopped at a foot in length; but any shoots not likely to exceed 14 inches in length are not interfered with, as the moderately vigorous shoots of from 9 inches to a foot in length are always the most fruitful. One of the main objects to be aimed at is the equalisation of the vigour of the trees. It is better to cut away an over-vigorous shoot or restrain it by close pinching than permit it to monopolise nutriment needed by other parts of the tree.

PRUNING.—When the fruit is gathered we cut away the shoots which have produced the fruit, others being provided to furnish the crop of the coming year. Exception must be made of shoots that are required for extension, forming as they do part of the principal branches; and if the trees have any long bare branches no time is so fitting for their removal as when the crop is gathered, for we thereby admit the maximum of light and air to the foliage of the parts left, and enhance the ripening of the wood. When the leaves have fallen the trees are untied, and the pruning completed by cutting the shoots back to 8 or 9 inches of their length, and to a triple bud, or at least a wood bud, and if these are only produced at their base and extremity the shoots are not shortened, but are left their full length. Shoots required for extension are shortened so as to maintain the tree's equilibrium, and any unripe growths are cut back to firm ripe wood.—G. ABBEY.

FORCING LILY OF THE VALLEY.

We have received from the Hon. and Rev. J. T. Boscawen some highly superior flowers of this popular plant, and fully equal to the best examples of continental growth. Accompanying the flowers was a letter from Mr. Boscawen, which is worthy of attention on account of the special stress which is laid on the carefully maturing the foliage after the flowers have been gathered. As a rule much injury is done to forced plants of various kinds by subjecting them to an unnatural system of treatment immediately after they have ceased flowering. It is only by fostering a perfect growth of

foliage that perfect flowers can follow, and there are no plants to which this applies more forcibly than to Lilies of the Valley. By adopting this principle Mr. Boscawen has produced flowers from plants which have been in the same pots for ten years, and if others will follow the plan of this skilled horticulturist they will have equally satisfactory results, and we doubt not will arrive at the same conclusion, that there is "no difference between continental and English-grown plants." The following is an extract from Mr. Boscawen's letter:—

"I send you some Lilies of the Valley that you may see that it is possible to grow them in England as good as those flowered from imported plants. Much nonsense has been written of late years about French and Dutch *versus* English plants. I believe there is no difference. The blossoms I send are from a pot of roots taken up four years ago from a bed at least one hundred years old. I had some much finer (but out of flower now) that have been in the same pots ten years. I find it the best plan to force every other year, but to place all the pots in March under glass, in order that the leaves may grow early, being protected. By this means I obtain leaves as well as flowers at Christmas."

SELECT HARDY WALL PLANTS.

SOME two or three months ago a correspondent asked for the names of some climbing plants suitable for covering a fence. More pressing matters caused this to be set aside for the moment, and I yet now hasten to give the requisite information while there is yet time for the planting to be well done.

Climbers for fences should consist in the main of those which partake of the evergreen type, in order to secure an agreeable and lively effect throughout the year; several distinct sorts should be mingled together for the sake of variety and for flowers at different seasons of the year. At the present moment we have *Jasminum nudiflorum* laden with its bright yellow flowers, and, although bare of foliage, yet the green-backed spray always presents a fresh and lively appearance. The winter-flowering *Honeysuckle* (*Lonicera fragrantissima*) is abundantly clothed with handsome foliage, and with a pair of its pretty white and fragrant flowers springing from the axil of every leaf. *Garrya elliptica*, an evergreen of very stent robust growth, is now highly attractive from the striking effect of its tufts of long catkins of flowers pendant from the tip of every shoot. A little later on we shall have the bright yellow flowers of *Fremontia californica*, with the pink, blue, and white of the *Ceanothus* and *Escallonia*. Very few shrubs are so striking as is *Ceanothus rigidus* when seen in the full spring beauty of its dense clusters of pale lavender-coloured flowers. *C. divaricatus* is also a spring-flowering variety. It is an evergreen of much more vigorous growth than *rigidus*, and has such handsome foliage that a prominent position ought always to be given it. I have two plants of it, both about 10 feet high, one on the south side of a building and the other facing the west; they are in perfect health, but neither of them bear many flowers, and I shall be glad to know if it proves more floriferous in other hands. *Ceanothus azureus*, a good old autumn-flowering sort, is a general favourite, its handsome blue flower spikes always attracting attention and being most useful for cutting. I have had more applicants for its name than for any other of an extensive collection of climbing plants. With mild weather it continues flowering very late, and its flowers have continued opening throughout the present winter.

Of the *Escallonias*, *macrantha* deservedly ranks first, the elegant dark-hued, evergreen, glossy foliage forming a charming foil to its bold flower spikes of a deep rich pink, which open into full beauty in spring and early summer. *E. Ingrami*, while closely resembling *macrantha*, is certainly inferior to it in the size and colour of both foliage and blossom; but I would not entirely discard *Ingrami*, for it continues much longer in flower than *macrantha*, and its light pink flowers are very pretty. The white-flowered variety, *E. pterocladon*, bears a profusion of charming white Hest-like flower spikes early in the year. It is wonderfully robust, and climbs almost as fast as *macrantha*.

The *Honeysuckles* (*Lonicera*) comprise much too important a section of this charming class of plants to be left out. The winter-flowering *L. fragrantissima* has already been noticed; next to it comes *L. flexuosa* and *L. brachypoda*, the first having dark-coloured foliage and flowers, and the other being of a lighter hue in both respects, otherwise they bear a close resemblance in freedom of growth, perfume, and abundance of

flowers. Both are especially valuable for the rapidity with which they cover a building and for their sub-evergreen habit. *L. grata* is valuable as an evergreen variety, growing freely and coming into flower about midsummer. It is a very distinct variety, as is also the scarlet-flowered *L. sempervirens*. Some confusion exists concerning the nomenclature of this genus. In the selection of four or five here given I have retained the names by which they are generally known. In this neighbourhood the common Woodbine—the most familiar form of Honeysuckle—abounds, the roadside hedges being often crested with thousands of its flower clusters, loading the air with their delicious perfume. Poets have sung the praises of the Woodbine, but gardeners do not appear to recognise its value. Not a woodland walk should be without it and that other poet's flower the Eglantine (*Rosa rugifolia*), with the lovely pink-flowered *Rosa canina*, that in the wild grace of its bold yet most delicate flower sprays surpasses our best efforts in the formal Rose garden.

This paper is not intended to be an exhaustive one, and I must rest content with adding that Berberidopsis corallina, with stout, handsome, and very dark evergreen foliage and drooping clusters of coral-red flowers, ought to have a place in every collection; that *Cotoneaster microphylla* is quite the best climber for a windy corner or any exposed situation, clothing the wall with a dense growth of deepest green, enriched throughout winter with rich-hued crimson berries; *C. Simonsii* climbing quite as fast, and being equally effective in its way with foliage and berries of a lighter hue—the effect of both is wonderfully neat and trim; that the white-flowered Jasmine, *J. officinale*, should always have a place; and that *Amelopsis Veitchii* and *A. heteracea*, *Berberis Darwinii* and *B. stenophylla*, *Chimonanthus fragrans*, *Bignonia radicans* major, lots of Roses, and a perfect host of Clematis, upon which I may dilate upon a future occasion, are all "jewels rich and rare." Whatever may be your decision about sorts, plant them so that the growth may intermingle—the deciduous with the evergreen, light flowers with dark, blue colours blending with pink and white, and you will thus add much to the charms of what is always charming, and to the grace of what is always graceful and lovely.—EDWARD LUCKHURST.

ROYAL HORTICULTURAL SOCIETY.

MARCH 7TH.

FRUIT COMMITTEE.—HENRY WEBB, Esq., V.P., in the chair. A Paper was read from Mr. D. P. Bell of Alnwick relative to the withdrawal of the certificate in connection with the name Clive House Seedling Grape; and it was decided to associate the name of Alnwick Seedling in connection with the certificate. Messrs. Riven & Son sent a dish of very fine St. Michael's Oranges, grown and ripened in their houses at Sawbridge-worth. They were fine in flavour; also Maltese Blood Oranges of delicious flavour; the White Orange, with pale flesh, was good in flavour; the Prata or Silver Orange was also very good. The Committee unanimously awarded a cultural commendation. Mr. Bennett of the Pabley Nurseries, Barnet, sent an excellent basket of Garibaldi Strawberry, which was awarded a cultural commendation.

FLORAL COMMITTEE.—H. Little, Esq., in the chair. The exhibition ("meeting" is an inadequate word) was arranged in the conservatory, and was both extensive and excellent. The nurserymen's collections merit prominent notice, but the pressure on our advertising columns precludes a detailed account of the several collections. The morning was cold, yet many choice tender plants were staged.

One of the most prominent plants exhibited was *Dendrobium Pierardii* from Mr. Selwood, gardener to the Duke of Westminster, Eaton Hall, Chester. The plant was in a basket, and had twenty-three pendulous stems, ranging from 3 to 5 feet 4 inches in length, and densely covered with delicate flowers. The largest number of flowers on one growth was eighty, the total number on the plant 1124. A silver-gilt medal was worthily awarded to Mr. Selwood for this splendid plant.

W. H. Michael, Esq. (Mr. Newman, gardener), Cholmeley Park, Highbury, exhibited a very rich group of Orchids, comprising twenty superior *Phalenopsis*, *Dendrobium litiflorum*, *thrysiiflorum*, and *crasinode* very fine; the strikingly spotted *Odonotletia Brocklehurstiana*, *Colax ingens*, and excellent *Odonotoglossum*. An exceedingly creditable collection of Orchids was also staged by Mr. Ollerhead, gardener to Sir Henry Peck, Bart., Wimbledon House. The plants numbered about forty, and every one was in admirable condition. Amongst them we noticed *Trichopilia suavis*, *Lycaste cruenta*, *Cattleya citrina* and *Trianae*, *Dendrobium Wardianum*, *litiflorum*, and others; *Dendrobium glumaceum*, *Odonotoglossum nebulosum* and

Alexandrae, *Phalenopsis*, &c. Silver medals were recommended for the collections. Mr. Roberts, gardener to W. Terry, Esq., Peterborough House, Fulham, also staged half a dozen capital plants; *Cymbidium oburnum* was very fine, and *Brasavola venosa*, *Vanda suavis*, and *Oncidium* were noticeable. A vote of thanks was awarded.

Mr. James, gardener to W. F. Wilson, Esq., Reifless, Isleworth, exhibited fifty *Cinerarias*, which for the vigour of plants, size, substance, and rich colours of the flowers, have rarely been equalled and never surpassed. The strain was highly commended by the Committee, and for two splendid varieties (*Mary*, and *Thomas Winter*) first-class certificates were voted.

The plants exhibited by Messrs. Veitch & Sons were numerous and rich. *Lelia Veitchii*, a cross between *Cattleya labiata* and *Lelia crispum*, was gorgeous by its mottled sepals and rich labellum; *Oncidium splendens* was very striking, as also were many other Orchids. *Marantis Masanganae* and *Soneris margaritacea superba* were prominent amongst the foliage plants; *Cephalotus follicularis* and *Darlingtonia californica* were curious. *Abutilon Darwinii tessellatum* was laden with flowers, although the plants were only a few inches high. Lilies, Cyclamens, and *Amaryllides* completed this fine group. First-class certificates were awarded to Messrs. Veitch for *Encyclus australis*, a striking and valuable Crinum-like plant; *Rhododendron Taylorii*, rose flowers, freely produced and charming; and *Dendrostaedia davalloides Youngii*, a stately Fern of robust growth; also to *Osmunda palustris*. A silver-gilt medal was recommended for the collection.

Mr. Turner, Slough, staged fine heavily-berried standards of *Aucuba japonica*, *Camellias*, and a new Carnation—*Rose Perfection*—most free-flowering variety, attractive and sweet, and received a vote of thanks. Mr. F. Pan & Son, Waltham Cross, exhibited out blooms of *Camellias* in a hundred varieties—a splendid display of superior flowers, for which a silver medal was recommended to be given. Mr. E. S. Williams staged a varied and effective group of ornamental-foliaged and flowering plants, and also flowers of great merit of three varieties of *Primula sinensis*, and a vote of thanks was awarded. A first-class certificate was also awarded to Mr. Williams for a hybrid *Azalea*—*Mrs. Carmichael*. Mr. Wills exhibited a large collection of miscellaneous plants artistically arranged, also six new *Dracaena*—*Rebecca*, *Terminalis alba*, *Gladstonei*, *Elizabethae*, *Salmonia*, and *Sidney*. These plants were in splendid condition, and fully sustain all the encomiums which have been previously bestowed on them. A first-class certificate was awarded to *Terminalis alba*, which is almost certain to become a popular "market plant," and be in large demand. Mr. Dean exhibited an attractive collection of *Primrose*, and received a vote of thanks. Messrs. Osborn & Sons, Fulham, staged a fine semi double scarlet *Azalea*, a fine form of *Cyclamen persicum*, and a white serrated Carnation named *Guelder Rose*—a fine flower, to which a first-class certificate was awarded.

Messrs. G. Paul & Son, Cheshunt, exhibited two *Roses*—*Fortune's Yellow*, a coppery salmon colour; and *Beauty of Glenwood*, which is not striped, nor cannot in any sense be regarded as novel. Its appearance in its present form is certainly disappointing. The Floral Committee decided that the two *Roses* exhibited were identical, and Mr. Paul has done a service to rosarians in placing the much-wanted *Rose* in its right position.

Sir T. Lawrence, Bart., Burford Lodge, Reading, was awarded a first-class certificate for *Dendrobium crasinode Barberianum*. A vote of thanks was awarded to Sir G. Macleay, Penderell Court, Bletchingley, for *Echmea glomerata* and *Marica erulea*, which were referred to the Scientific Committee. The thanks of the Committee were also voted to J. S. Tyerman, Esq., Tregony, Cornwall, for hardy cut flowers.

A collection of *Epacris* was exhibited from the Society's garden at Chelwick.

NATIONAL ROSE SOCIETY.

The schedule has been now issued, and a most tempting one it is to all lovers of the Rose, whether exhibitors or simply growers of the queen of flowers, for such a schedule is sure to bring together a grand collection. £250 and more in prize, including a challenge cup of fifty guineas for amateurs, a five-guineas cup given by the *Journal of Horticulture* for the best twelve blooms exhibited by amateurs, and a five-guineas cup by Edward Mawley, Esq., for twelve Teas. The challenge cup is given by Messrs. Cranston & Co. of Hereford, and with the very liberal condition that it must be won in three years, not run over for an indefinite time—thus, if A wins it in 1877 and B in 1878, only A and B can compete for it in 1879. Already upwards of £130 has been given as donations, and upwards of a hundred members have enrolled themselves. The Committee confidently hope to increase the donation list until it covers the prize list, and to multiply their members very considerably

when the papers now ready for issue are circulated. The Horticultural Club has placed its room at their disposal, and all communications may be addressed to the Hon. Secretary, 3, Adelphi Terrace, W.C. All lovers of the Rose ought to patronise so laudable an effort as this to still further popularise the Rose.—D., Deal.

NOTES AND GLEANINGS.

THE EXHIBITION OF ARTIFICIAL FLOWERS AND FRUIT now being held in the central transept of the Crystal Palace, while containing several admirable examples of artistic skill, is the reverse of being imposing. The exhibits are arranged on half a dozen narrow tables, each about 20 feet in length, and a few dozens of plants in pots are placed on shelves at the front of the theatre. Artificial plant-making is evidently in its infancy, and we must candidly affirm that we were not prepared for such unnatural results. Nurserymen need not tremble in their shoes in this generation for fear of being superseded by the "artists." The wax plants are disappointing, and the fruit is far from being satisfying, even to look at. The Plums are decidedly the most natural in appearance, and some of the Pears, Peaches, and Nectarines are fairly well executed, but the Grapes are "dead failures." The greatest success is found amongst the flowers, some of which are truthfully, and it must be added dextrously, executed. Especially noteworthy is a group of Allamandas, Eucharises, Stephanotis, and Orchids from Mr. Charles Moggridge, 43, Charlotte Street, Bedford Square. A large and skillfully executed collection is also arranged by Mrs. Austin, Arnold Road, Tooting. Bouquets, especially those containing Rose buds, Camellias, and Bourdianas are attractive, but those containing Verbenas, Geraniums, and Fancies are less natural. Roses in several varieties, especially *Maréchal Niel*, are very true to life. Camellias are also good, the flowers being better than the foliage. A group of Water Lilies is very fine. A gigantic bouquet of mixed flowers commands attention by the richness of the colours and skillful execution. No flowers ever grew at all like them, but (perhaps in the artist's estimation) so much the worse for the flowers. Flowers in "gold and silver" are represented; also in wool, the latter being skillfully "worked;" but the most satisfactory display of the Exhibition is that of the skeletonised leaves, the delicate beauty of which commands much attention. Messrs. Dick Radcliffe & Co. contribute an attractive display of Grasses and Everlastings. The Exhibition remains open until the 17th. It is the first public display of its kind, and an inspection will afford pleasure to many fair admirers, especially if they do not go with "great expectations."

ONE of the finest DOUBLE PRIMULAS that has come under our notice is now flowering in the nursery of Messrs. E. G. Henderson & Sons, Pine Apple Place, Maida Vale. The flowers, which are nearly 2 inches in diameter, are produced in large whorls. In colour they are rosy carmine, and the petals are slightly serrated. This *Primula*, which is not yet in commerce, is named *Eva Fish*. It is not more remarkable for the size of the flowers than for the vigour of the plant, and must be regarded as a variety of the highest order of merit. Excellent varieties of these valuable plants also flowering in the same nursery are (*filicifolia*) Emperor, dark; (*filicifolia*) Empress, white; and *Magenta Queen*.

WE learn that the RUSSIAN SOCIETY OF GARDENING has appointed a special committee to prepare a scheme for the best mode of representing Russian gardening at the Paris Exhibition of 1878.

THE fourteenth annual exhibition of the LEEDS HORTICULTURAL SOCIETY is announced to be held on June 27th, 28th, and 29th. The schedule numbers sixty-eight classes, and liberal prizes are offered for plants, cut flowers, and fruit. The principal amounts are £24 for twelve stove and greenhouse plants, £20 for collections of plants grouped for effect, and £25 for show Pelargoniums. The railway companies will return plants, &c., from the Show free of charge provided they remain the property of the exhibitor. We have no doubt the Show will fully equal the excellent displays of past years.

WE have received the report of the EALING CURVANTHIUM SOCIETY and the schedule of the next show, to be held on November 10th. We are glad to notice that the Society is well supported, and the early issue of the schedule suggests also that it is wisely managed. The Right Hon. S. H. Walpole is the President, and Mr. Thomas Simpson, Audley Lodge, Florence Road, Ealing, the Hon. Secretary and Treasurer of the Society.

WE are pleased to learn that the MAIDSTONE GARDENERS' IMPROVEMENT ASSOCIATION is in a flourishing condition, new members, both honorary and ordinary, being enrolled at almost every meeting. A spring show is to be held on April 17th. No prizes are given; the members exhibit for the "love of the craft," and thus advance horticulture and honour themselves. The Association devotes a portion of its funds towards assisting deserving members during sickness or other causes of adversity. Such a Society deserves to prosper, and we cordially wish it success.

A CORRESPONDENT writing to us from the North Riding of Yorkshire on the late EVERE WEAHER and ITS EFFECTS ON VEGETATION, states that after all hope of filling the ice-house was past, the weather suddenly changed on the 26th ult., and frost set in with a fall of snow 2 inches deep, and on the three following nights, 15", 16", and 18" of frost were registered, giving ice 2 inches thick. Apricot blossoms are just showing colour, and Pears on the Quince are dangerously forward, those upon the Pear stock being later. There is a great promise of blossom of all kinds, and Roses had produced shoots 2 or 3 inches long which were quite killed; but the buds at the base of the shoots will, after being pruned in early April, the best time for pruning in a cold situation, grow strongly and afford good blooms.

A CORRESPONDENT who lives near the Bristol Channel writes:—"In reference to *Laurustinus* being late in blooming, it is true to a certain extent here this winter. We have many bushes; one of them was in flower in November, and it has been in bloom ever since. At that time others looked as if they would open their buds in a few days, and they are still no further advanced than they were three months ago. The weather has been very mild all the time. Should frost come in March (as I hope it will not) I intend watching to see if the cold will cause the flowers to open, and I may let you know the result. Would you say how many varieties of the white winter-flowering *Laurustinus* there are? There is a bush here which produces trusses and individual flowers three times the size of the sort commonly seen in gardens. As may be readily imagined it is vastly superior to it; in fact, the two will bear no comparison. Those who grow the *Laurustinus* for greenhouse decoration should obtain this fine variety." [There are half a dozen hardy evergreen *Laurustinus*s, the best being the one referred to by our correspondent—*Viburnum Tians lucidum*. It is valuable for garden and conservatory decoration, and is deserving of extended cultivation.]

MR. HAWKINS, gardener, Ewenny Abbey, Bridgend, Glamorganshire, tells us that he grew last year in pots Pitmaston Duchesse Pears weighing 27 ozs., Durandean 21 ozs., and Daynèe du Comice 17 and 18 ozs., that fruit being of excellent flavour. He wishes to know if other gardeners have obtained fruits as fine or finer.

IT is not generally known how valuable are the varieties of TREE PEONIES (*P. moutan*) for conservatory decoration during the early months of the year. At the Pine Apple Nursery these plants are grown and forced with great success. They flower quite freely in 5 and 6-inch pots, and their massive blooms in many hues produce a striking effect. The principal point to be attended to in forcing is to permit the flower buds to form in a cool temperature, and not until they are fairly prominent must the plants be placed in brisk heat. The named varieties of these Peonies are very beautiful, and their colour are never so clear and pure as when the flowers expand under glass. For general decorative purposes few plants can be more effective than those referred to, and of which more will probably be heard as their merits become better known.

THE DEER ROSE SOCIETY'S SHOW is announced to be held on July 17th. The schedule is a modest one. There are five classes for Roses, also classes for stove and greenhouse plants, and special prizes are offered for Pansies and table decorations.

WE are informed that the business of horticultural engineer and manufacturer of hot-water apparatus carried on so successfully by the late Mr. OMSON, at Stanley Bridge, Chelsea, will be carried on as heretofore under the same name.

IN the three winter months ending February the MEAN TEMPERATURE at the Royal Observatory, Greenwich, was 43.4°, and exceeded by 5.4° the average for the corresponding period in one hundred years.

THE Succulent house at Kew, which is at all times worthy of a visit, is perhaps specially so at the present time,

as containing a flowering specimen of AGAVE ELEMETIANA. The flowers are greenish-yellow, and the towering spike commands the attention of all visitors.

GLADIOLUS CULTURE.

MUCH has been written from time to time in the horticultural papers on the failure in the culture of the Gladiolus, and very recently in a contemporary on the (miasm) disease. It is an acknowledged fact that the Gladiolus is one of the greatest ornaments of the flower garden and one which commands the greatest amount of attraction at our autumn exhibitions. Many are deterred from growing this grand flower through reading these erroneous statements set forth by inexperienced growers.

Corms imported from France, as well as those grown in this country, have been submitted to our greatest physiologists for examination and opinion. A work also has been written by an able writer on horticulture on this subject, endeavouring to show that all the failures are caused by this contagious disease over which we have no control; yet no disease has been proved to exist. I have devoted a great portion of my life to the propagation and culture of this flower, and have no hesitation in asserting that no inherent or contagious disease exists, but it is a natural state of decay and exhaustion arising from age and excessive reproduction. Thus the truth of the old saying, "Pluck your flowers and save your plants;" the Gladiolus having a prolific tendency, producing, as it does, twice as much bloom as foliage. We do not experience more losses amongst the Gladiolus than we do among other bulbous plants; for instance, the Lily and Hyacinth, which are imported into this country in immense numbers; yet our gardeners are comparatively bare of these flowers. They do not die from disease; what, then, becomes of them? They simply die from exhaustion or wrong treatment. These as well as the Gladiolus can be grown in this country to as high a state of perfection as in any part of the world.

The method adopted here in cultivating the Gladiolus is very simple. The situation is an open field of six acres. The soil is sandy or gravelly loam on a bed of gravel. A moderate proportion of ordinary manure is used, and for those of the most delicate constitution I add a portion of peat and river sand. I commence planting about the 20th of February, and have now (March 1st) planted over an acre. The whole of the bulbs are planted in drills from 1 to 3 inches deep and from 2 to 12 inches apart, according to the size of the bulbs. Medium-size bulbs produce the finest flowers, although most purchasers prefer large-size bulbs, which accounts for so many failures, as many of these are exhausted from age and the strain put upon them the previous year.

The same remarks apply to the Hyacinth. Our best growers know well from experience that firm, solid, medium-sized bulbs produce the finest blooms. The bulbs are kept free from weeds and mulched over with short half-spent manure. All those in the store beds as soon as they commence blooming are cut and sent to all parts of England for decoration. Thus from the flowers being plucked in their early state exhaustion is prevented, and fine healthy bulbs are the result. In dry weather stimulants are resorted to by applying liquid manure, which I find beneficial.—JAMES KELWAY, *Gladioli Villa, Langport, Somerset.*

LIBONIA FLORIBUNDA—THYRSACANTHUS RUTILANS.

I HAVE presided over two most successful meetings of the Maidstone Gardeners' Improvement Association, to which several excellent specimens were brought to illustrate the discussions that were likely to arise.

I have never before seen of the Libonia floribunda such large specimens and so well flowered as those brought on two occasions by Mr. Longley, a gardener in the neighbourhood. He stated his plan to be, after flowering to ripen the wood well near the glass in a cool house; after that to cut the plant back in proportion to the growth it has made, and when started fairly potting firmly in rich loamy soil. Early in June the plants are plunged in the full sun and kept well watered, and twice a week with liquid manure of almost any kind; but he always mixes a handful or two of soot with it. I ought to say that he mixes rape dust with the soil and sand. He also brought a plant very little inferior to the one above spoken of that had been treated similarly up to June; but instead of

being kept in a pot it was planted-out and taken up in September and potted again, when it soon came into bloom, and will to all appearance continue so for some time yet. The effect of planting-out was to make the foliage larger and bring the flowers finer and also of a richer colour. The thanks of the meeting were awarded to Mr. Longley.

Mr. Cossem, gardener to Campbell Bannerman, Esq., M.P., produced a fine plant 3 feet high and proportionately large of *Thyrsacanthus rutilans*, which for fine foliage and its long racemes of large highly coloured flowers has not been surpassed at this Society's meetings. The difficulty in the cultivation of this plant is to keep its foliage in a healthy state, as it is known that a check will cause this plant to shed all its leaves, leaving its stems like so many sticks. Mr. Cossem uses peat and loam in equal parts, and plenty of sand mixed with the loam; but weak guano water is applied often, and the plant kept growing fast till flowering time comes.—T. RECORD.

ROYAL HORTICULTURAL SOCIETY.

So much space has been devoted to the discussion arising out of Mr. Wilson's guinea scheme that I am almost ashamed to ask for more, yet I must reply as briefly as possible to that gentleman's letter on 15th.

Mr. Wilson in parenthesis asks of me a plain question (he puts all his pertinent points in parenthesis)—namely, if I have asked "a single person to become a guinea subscriber?" Yes, I have asked several single persons and also many who are married to send in their names as guinea subscribers, and I know some of them have done so.

Next, Mr. Wilson objects to my conclusions that the results of his appeal are "impotent." We must judge of this in a comparative sense. I should be sorry to say that three hundred guinea subscribers to the Society were in themselves impotent; but when we consider that eighty thousand appeals have been generously distributed by Mr. Wilson, and that the gardening and daily press have given him such liberal aid; when we further consider that the term was only a quotation from Mr. Wilson's letter when he suggested the formation of a new society by those responding to the appeal; and when we find that the entire roll-call numbers less than four hundred guineaists, then I submit that the quotation of Mr. Wilson's term as applied to the efforts of the Council was perfectly justifiable. I thought, and hundreds thought, that from the high tone adopted that at least four thousand were ready to come in, and I could not resist expressing my disappointment.

Mr. Wilson at the first relied on numbers, but now these have proved so limited he takes refuge under names—"good names," "influential," &c., are mentioned. Granted that these are good and would be an acquisition to a royal society, still nothing can atone for the absence of numbers in a guinea scheme, the very essence of which consists in its numerical character.

I fully agree with Mr. Wilson that there are many hundreds of country residents who cannot be expected to contribute more than a guinea to the Society, and it is on this account that I am a believer in the guinea scheme, probably in the same sense as Mr. Veitch is (although I have not had an opportunity of consulting that gentleman)—that is, I am in favour of guinea subscribers joining the Society under present circumstances and as managed by a council which even on Mr. Wilson's own showing, as well as by other equally good proofs, has the confidence of horticulturists. Mr. Wilson's plan is to admit guinea subscribers only on the condition that the Society relinquishes the gardens at South Kensington—a condition which he knows it is impossible at present to carry out. Mr. Wilson also stipulates that guinea subscribers should have the full privileges of four-guinea or two-guinea subscribers—i.e., should have voting power. I once thought the same, but I am now satisfied that the request is untenable, and I repeat that if every guinea subscriber has a right to vote, everyone has a right to be a guinea subscriber; and on the same principle—the pretty theoretical principle—of equality, the distinction of privileges between the four and two-guinea members becomes an anomaly. I am in a position to know that that is the view taken by some large subscribers, and I am sure their opinions are worthy of consideration.

I am glad, however, to find that Mr. Wilson shows a disposition to yield his point relative to the severance of the Society from South Kensington, for he says on the page quoted, "If the [guinea] representative horticulturists would come in the Society would be leavened by the horticultural

element, which has been the great object of our work." Mr. Wilson further remarks—"Some would say the Society has still the South Kensington encumbrance; but if they were asked only for a guinea it is not they who would pay for this, they would get horticultural consideration for their guinea, while the £4 4s. and £2 2s. subscribers would pay for the South Kensington Gardens." Exactly. A more cogent argument could not be advanced in favour of guinea subscribers joining the Society as at present constituted, and Mr. Wilson can no longer (except on the matter of voting) object to their joining from this time henceforth.

I now revert to the question of voting. As a plea for the "approval of silence" given by Mr. Wilson and all the leading horticulturists to the policy of the Council (at the general meeting of the 13th ult.), your correspondent states that guinea membership was not mentioned in the report. That may be true, but it is equally true that the subject was prominently brought before the meeting and discussed, Lord Alfred Churchill clearly enunciating the policy of the Council, and to that policy, and at that proper time for doing so, not one dissentient voice was heard. A dissenion on a point considered by anyone to be vital could surely not be deemed "needless;" but in reality voting is generally esteemed as practically inapplicable to the great bulk of country subscribers; and although the term "voting" possesses an alluring sound, it is to those who would refuse paying a fine (travelling expenses) of, it may be, much more than an extra guinea to exercise it, only an alluring sound.

In conclusion I ask that as the Council is trusted as horticulturists desirous of doing the best for the Society and promoting the work it was established to foster, the guineas may come in, and I am not without hope that a horticulturist so earnest as Mr. Wilson will yet perceive that that is preferable to trusting to any casual "chapter of accidents."—A GUINEA MAN.

[As the plans of the Council are settled for the ensuing year, and as guinea members are now being admitted, we cannot occupy valuable space in the further discussion of a subject which can be of no practical benefit, and which has hitherto been productive of such feeble yet mischievous results.—EBS.]

FICUS PARCELLI FRUITING.

I HAVE a plant of *Ficus Parcelli* bearing a fruit. The Fig is precisely the same form as an ordinary Fig, but much smaller. I do not know if it will increase in size; it is now about as large as a blackbird's egg, beautifully variegated. Is its fruiting uncommon?—JUVENILE.

[This is the first time that we know of this Fig fruiting in England. As there are many to whom this beautiful variegated-leaved plant is not known we will add a few relative particulars. It is named after its discoverer, Mr. Parcels, plant collector for Messrs. Baptist & Son, Sydney. Messrs. Veitch and Sons were awarded for it a first-class certificate by the Royal Horticultural and Royal Botanic Societies in 1874. Its leaves are dark green profusely blotched with white.]

RED-LEADING SEEDS.

"D., Deal," says that notwithstanding having well red-leaded his Peas the mice have been at them. I wish to ask him if he prepared the seed in the manner I described, or did he fall into the same mistake which Mr. Fish laboured under when he recommended the seed to be damped with water instead of linseed oil? or are the Kentish mice of another species to those of a more northern climate? "D., Deal," does not state to what extent he has suffered, nor how many Peas he found stored up in his Auricula pit as a reserve for a future meal. I quite believe him in saying that he found some carried away. I myself, in the first or second year after discovery, on looking over the rows of Peas found five holes made by mice, and the following day the same number of Peas under a draining tile. What "D., Deal," has advanced does not prove the dressing of the seeds to be a failure, or that I am a deceiver. Such authorities as Mr. McEwen (see "Florist and Pomologist," 1875, p. 7) and Mr. Fish (see *Journal of Horticulture*, 1870, p. 396), with hundreds of practical horticulturists sustain me.

For the benefit of your subscribers I will just describe the proper way to prepare the ecde. Having a suitable vessel, say a tin can, large enough, shake the seeds round, adding by

degrees as much linseed oil as will give a slight coating whilst shaking, then add as much dry red lead as will make the seeds appear as if painted, and by well shaking in twenty-four hours they will be fit to handle. One teaspoonful of oil is sufficient for a quart of Peas, and for other seeds in proportion. I have found it necessary in the case of wrinkled Peas and Beans to use a larger quantity of oil, and allow it to drain off through a fine sieve. Seeds thus properly prepared I am certain, after the experience of more than twenty years, will be perfectly safe from the ravages of both rats, mice, and birds.—JOSEPH BURGESS, *Knutsford*.

PRUNING ROSES.

EVERYBODY is asking, How about pruning in this extraordinary season? I have been hoping to have seen remarks on the subject. You have many high authorities amongst your correspondents; but as private letters have been addressed to me, I will venture to express my opinion, in the hope of inducing others. It is this, that, taking one season with another, the first week in March for the south and south-east is as good a time as can be selected; and for Tea Roses at least a month later. Perhaps pruning may be desirable a week or two sooner on budded stocks which are to be cut back very close, and a week later will be desirable in cases where March "comes in" really "like a lion." Certainly, the difficulty this year with some excitable *Manettis* is to find a single bud anywhere to cut back to as dormant.—A. C., *Brockham*.

AURICULAS.

I AM sorry to see that our brother of Deal is among the afflicted with woolly aphid upon his Auricula roots; but when he speaks of having been utterly ignorant of its existence on this plant till recent notices of it in this Journal I am afraid he does not see the "Florist and Pomologist," in which so far back as last October I did what I could to put all growers on their guard against this secret foe. I spoke of it as "a terrible thing, infesting the roots, permeating the soil, starting apparently from centres of decayed vegetable matter in the compost, destroying the fine white fibres of the plant, and causing it to have a languid, dull, set look, very noticeable and distressing."

This intimation would, I thought, at least give each grower uneasiness enough to lead him to examine his own collection thoroughly to see that all was safe. Attention in the beginning of October would have made all the difference, for the plants in their autumnal growth would have rooted again before long.

The only counsel I have for my friend now is, that late as it looks, and forwarder as Auriculas must be in Kent than in North Yorkshire, I should still prefer ridding them of the pest to allowing them miserably to struggle through the bloom with this wretched insect preying on their vitals. The plants can only be even more and more distressed by leaving them in their present case.

Either they should be turned out of the pots and have their stems and roots well washed in soft soap and water, or at least the soil should have a good watering with that solution. I should prefer the former method, but should not now wash the foliage. It is so advanced that a Smiling Beauty or Glory would be quite ruined in appearance; and with "D., Deal," all the blooming foliage will be now developed, and all the rich meal would be lost by a leaf-bath.

Auricula fibres are in high activity now; and if they could even yet be set healthily to work in sweet new compost, I feel sure, from intimacy with these plants, the nature of which I have striven to understand, that to give them this chance is the best treatment "D., Deal," can afford them. That is what I should do, and I should have the new compost comfortably moist, so much so as both to work freely and yet support the plants without water for a week or more. I should keep them close for that time to encourage them to draw root, which Auriculas will always sooner do in an open soil than in one clogged and wet with water. When they showed signs of going along again I should give them air as usual, but they must be watched, and not allowed to become drawn. Hope, then, my friend will take heart again. It is no good doing nothing; therefore "why these weeps?" If he will tackle the enemy boldly and handle his ailing plants with such unremitting care as gentle Bob Cratchit had for poor Tiny Tim I can foresee that his nursing also will be rewarded and his afflicted plants recover, though they cannot of course recover

all their lost ground this time, and I hope that still his chances at the great south show may not turn out the ghostly thing he fears.

I am glad to know from a correspondent that Gishurst compound may be safely used to Auricula roots as a wash, though the plainer and effective remedy of soft soap contents me well. Still do I repeat the caution, Treat no valuable Auriculas with any lotion or medicaments of unknown powers and unproved effects. Try experiments first *in corpore villi*—on some cheap life, say of seedlings that are inferior and will be thrown away.

As to paraffin oil, a drop of it upon Auricula foliage I have found injurious. I lost a fine plant of Pizarro by one drop in the heart, but syringing plants with water just flavoured with it I have heard destroys green fly without hurt to the plant. If "D. Deal," wishes to experiment with it against woolly aphid on Auricula roots I should think it had better be very much diluted indeed, and tried first upon something of no value.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

THE SEASON AND THE CALENDARS.

IN a season like the present, when the weather has been so inconsistent as to hinder the work and at the same time push vegetation so forward as to make it doubly necessary to have many of the routine operations completed early, it becomes a matter for immediate consideration as to what work there is a probability of finishing fairly well. I do not want to encourage laziness or unnecessary procrastination, but I would always have it borne in mind that "what is worth doing at all is worth doing well," and as it is quite impossible this spring to complete all which was contemplated, it is better to look the matter full in the face at once with a view to prevent attempting impossibilities, and to make sure that we do not get behind in everything, for if such a misfortune happens at the beginning of the year there is no remedy for it afterwards. If one were to read all the calendars of operations written for the present month and attempt to carry them out to the letter, there would certainly be an ignominious failure. There is so much which "must be pressed forward with the least possible delay," that there certainly would be no time to look round and think, and the harder one worked the greater would be the muddle and confusion.

No one can write a calendar of operations to suit everybody at every place and in every season. Calendars should only be taken as hints, and as such they are extremely useful, but generally speaking if followed to the letter they will do nearly as much harm as good, especially such as are written in standard books and intended to be used year after year. For instance: In Thompson's "Gardener's Assistant," the best book on practical gardening ever published, we read in the calendar for March that "the planting of deciduous trees should be completed as early as possible." Now, he who plants fruit trees in March this year will very likely have to plant again next autumn or the autumn following, and instead of gaining time he will lose one or two years besides his money and labour. Generally speaking there are only about seven weeks when it is proper to plant fruit trees—that is, from the last week in October to the middle of December, and instead of losing time everything will be gained by deferring planting all deciduous trees to next autumn, and properly preparing the ground during the summer.

There are generally two short seasons to plant evergreens: one is just as their buds are starting in the spring, in average seasons say the end of April, and the other towards the end of summer when the new growth has become a little hardened. Someone may ask, Why is it that evergreens may be moved so late in the spring, while it is forbidden to move deciduous trees at that time? The practical reason is that we know from experience, and the theoretic one that the old leaves of evergreens enable them to make roots quicker than deciduous trees could. Pruning of evergreens, if the health and vigour of the shrubs are studied, is best done late in summer after the growth is completed, say after the middle of August, and the only excuse for doing it in spring is that the stiff appearance left by cutting is sooner hid.

Turf may be laid at any time during summer with the greatest success. Where the ground has been newly made up or trenched I prefer laying the turf in summer or late in spring. Last summer was certainly sufficiently hot and dry to try the system, and it answered perfectly without one drop of artificial watering. The only precaution, and that was an abso-

lutely necessary one, was to cover the turf over with fine sandy soil to the depth of half an inch. The turf laid late last spring (the end of May), was carted two miles, laid rolled-up two or three weeks till it became blanched, and although laid on newly made-up ground was in perfect order for playing tennis on in September. The lawn could not have been used last autumn if the turf had been laid early, for the ground was of necessity prepared during the very changeable weather of winter, and consequently settled unevenly from the rains in spring.

Walks and roads are better made in summer than at any other time, but there is no harm in making them now if there is a lack of more important work; but work comes on apace at this time of the year, and some of it will not bear delaying a day.—WILLIAM TAYLOR.

AUTUMN-STRUCK CHRYSANTHEMUMS.

EARLY in December last I received seventy-five cuttings of Chrysanthemums in twenty-five varieties—i.e., three cuttings of each variety. Having procured some light leafy compost and a quantity of large 60-sized pots and drained them well, I filled them with the compost, and then made three deep insertions round the side of each with my finger, and filled up the holes with silver sand, inserting one cutting firmly into each of these little wells of sand. I thus had twenty-five pots, each containing one variety and taking up very little room. These I placed on coal ashes in a close frame, in a cold greenhouse in the full light, keeping them slightly damp and shading a little from bright sun.

Early in February they were rooted, and I have now potted off sixty-six healthy plants singly and placed them again on coal ashes in a cold frame out of doors, giving air abundantly. I have therefore only lost nine cuttings out of the seventy-five I originally had.—P. F. S.

WOOLLY APHIS AND THE AURICULA.

As the attack of the woolly aphid on Auricula roots does not seem to be widely known, and all information that can be collected is of value to resist an enemy, I offer a few more notes, hoping others who have had experience may do the same. Since detecting the enemy on my plants I have found it also on another and independent (since last potting) collection a few miles distant, but I observe no new features beyond the mere fact which call for remark.

In discussing such a subject it matters less how the pest came in, the remedies form the valuable subject for discussion. Experiments I have in hand since the potting season show it was not in the soil, of which I had five samples from as many different places. The manure, however, mixed in the proportion of one-third was uniform. But I imagine that an aphid—if indeed this insect be an aphid—passes some period of its existence in a winged state, and it seems impossible thoroughly to guard a free air-loving plant like an Auricula from the insidious visits of the full-legged aphid.

I am happy to say it has not taken as strong a hold of my collection as I at first feared; nevertheless, Mr. Horner's advice is so kindly given, and advice from so successful and experienced a grower is so valuable, that I should be ungrateful and unwise were I not to follow it out as fully as I can. In some cases I had already repotted and thoroughly washed my plants, roots and foliage, in a strong solution of soft soap and water, washing also the pot and throwing away the infected soil; while the frame in which they live is to be thoroughly washed and painted, and the woodwork laths on which the pots stand to be destroyed and fresh laths supplied.

I fear, however, that some plants are so forward that I must leave them and quarantine them till after the blooming. I have Col. Champeux, Lady Ann Wilbraham, Kay's Alexander, Meiklejohn, Conqueror of Europe, and some Alpines now in bloom; so it must be a question of quarantine for a short time till I can treat all alike.

I am very sorry I have given some plants away and exchanged others, and I cannot say how I regret the probability of having imparted the mischief to other growers. I have written to call their attention to the notice in the Journal, and this is all I can do.

I need scarcely say I shall not send any of my plants to any exhibition this year, nor allow them to leave my custody till I can conscientiously pass a clean bill of health. Adversity is the most instructive form of experience, and sorry as I am to injure my bloom for this year, extermination is the only cure

for an enemy which may itself be an exterminator.—JOHN T. D. LLEWELYN.

EXHIBITION PANSIES.—No. 3.

Of the older show flowers it is somewhat difficult to speak, their name being legion; but if I narrow the area of dissertation to the varieties I grow myself, and only refer to a few of the most meritorious, I may hope to succeed in not wearying your readers.

By common consent selfs are placed first in order, and following the rule I will refer to them first, though briefly. Of dark selfs those nearest perfection are free from shading and lack that shadowy blotch which so often surrounds the eye, though there are many very beautiful flowers which have not this distinction. Finale has stood its ground for many years, and is not likely to be ousted at present, and the same may be said of Locomotive, Robert Black, Alexander McNab, Rev. D. Taylor, and Miss Muir. The darkest I know is Erebus (Dicksons), and is an intense black of good substance; Count Biemarck, too, is black, but not by any means so good a flower as Erebus. Of good yellow selfs there is a large number, and selection is not easy. Cherub has long held its place as one of the finest, but its raiser (Mr. Henry Hooper of Bath) sent one out in 1875 which, though slightly deficient perhaps in quality, is a really good flower: I refer to Capt. Hayter, and it will be found to be very smooth, large, of the finest form, and with a splendid blotch. King Coffee came out with honours from Oxford, Manchester, and the Royal Botanic Society, but to my mind, of Mr. Hooper's two flowers, the Captain is the best. Golden Queen is a chaste light yellow of high merit, and Indian Yellow, Ophir, and Cloth of Gold are worthy of a place in the most select collections. The last-named has long been relegated to the ranks of bedders, but that does not cause it to be any the worse flower, and many inferior sorts even now pass muster at exhibitions. The best light self I know is Hooper's Duchess of Edinburgh, a beautiful cream with very large dark purple blotch, of exquisite form and wonderful substance. Cyril, though but of medium size, is a good flower, and George White, Helen Douglas, Marquis of Bute, Mrs. Turner, Mrs. Felton, and Royal Charter are admirable examples of this type. Though there are so many selfs and of so many hues, including black, white, cream, yellow, violet, purple, mauve, maroon, plum, blue, and mulberry, there is still room for improvement, and I hope that some day we may have a bright scarlet, rose, or crimson self to give additional attractiveness to exhibition pansies. The desired colours are already in some fancies, such as William Melville, rosy purple; Michael Scott, dark rosy red; George Wood, light crimson; Leith Walk Hero, carmine; and David Dickson, crimson, and we may reasonably hope that the busy bees or systematic hybridisation may produce selfs of the colours named.

Yellow grounds form a very large family, and there are so many of excellence that improvement seems scarcely possible. For a long time Robert Burns was the most esteemed, and not without cause, for its lemon ground and chocolate belt kept it distinct from its myriad purple-belted competitors. Defoe, too, held its place until Dickson's Christopher North discovered itself, and I may safely say a more handsome yellow ground I do not know. Walter McKay is an excellent flower, and William Catley (Hooper) is indispensable, being large, smooth, and constant. Beauty of Bath when ought is very beautiful, but with me it has proved as "fickle as fair." Amongst other good varieties John Downie, Miss L. Murray, Dr. Wood, Acme, Atlas, Senator, Sparkler, Perfection, and William Campbell are very distinct, and fulfil in addition all the requirements of good flowers. The kinds I have mentioned are for the most part constant, and this is a strong recommendation in Pansies. Last year I raised a seedling with a bright yellow ground and a broad brown belting, of medium size, perfect form, and good substance, but as inconsistent as a flower could possibly be. Now and then it came true, but sometimes the belting came in spots, and sometimes there was no belting at all. Of course under these circumstances it was worthless, but I shall try it again; and if I can persuade it to be true, an excellent flower of wonderful distinctness will be added to the list of yellow grounds.

Really good white grounds are scarce, though the number of kinds grown is great. Usually there is some irregularity in the belting, which, though apparently trivial, is to the florist an eyesore. In one the field is not well defined, the belting on the lower petal intruding upon the line laid down by the

side petals, and in others want of constancy is the leading fault, especially if the belting is a narrow one. Jane Grieve is the best variety I have grown, and is, as it claims to be, the finest flower in its class. I have never seen a deficient bloom, and, unlike many, it is a good grower, though not a profuse bloomer. Mrs. Galloway is a good flower with a deep bluish purple belting, and close up is the Medc with a broad purple belt. Dawn of Day, too, has no mean claim, its narrow bright purple belt rendering it very distinct and valuable. Mrs. Harbath, Miss Addison, Miss Bossey McAslan, Ladyburn Rival, Patroness, Bonny Jean, Mrs. Wrigley, Lady Paley, Mrs. Eyles, Mary Harper, and Tickler have merit, and are more or less to be depended upon. I have found that of all Pansies white grounds are the shyest bloomers, and last year this was especially the case, though, perhaps, the dryness of the season may have been the cause. Next week I will conclude my remarks with a few practical observations on cultivating and exhibiting.—M. H. MILLER, *Leck*.

As a florist's flower how little we see or hear of the Pansy—a flower that deserves to be more widely known and to be more largely loved. What can be more beautiful than the black velvety texture of Dux, or of the rich yellow of Golden Emperor? to say nothing of Alma, Princess Beatrice, Midland Beauty, John Currie, and other light and yellow grounds. I am not much in favour of fancies except as bedding Pansies. They are very pretty and afford a contrast to the solid colours of the more beautiful show Pansies. No doubt, as your correspondent has said in his article on page 98, that the Pansy has been a neglected flower, yet in our district it is never omitted from the schedules of flower shows. We have here Pansy enthusiasts, and I know men who have spent years of toil in cultivating their favourite flower.

I am glad that your correspondent admits having had a narrow escape of disqualification at the Nottingham Show. If he had been exhibiting at one of our local shows, where the Pansy is appreciated, he would have been—not almost, but altogether disqualified. I, with many others, went to that Show to see the Pansies and Roses, expecting to have seen the first prize for Pansies awarded to a pan worthy of the honour, and not to a mixed lot. The best pan of Pansies, exhibited by Mr. Taywell of Nottingham, was passed by altogether. I could have understood the award had the blooms been either all fancy or all show Pansies, but awarding the first to a mixed collection was past my comprehension. I find your correspondent considers that a pan has not that distinctness in a twelve show pan as in a mixed lot. I contend that a good Pansy judge can see a distinction in show Pansies without the aid of Belgian fancies; if not, then either the judges or the Pansies are at fault. Then, again, he says that in the catalogues of florist's flowers you see fancies introduced. I would ask him if he finds them mixed or whether they are separate? Every florist knows that there is a wide difference between a fancy and other varieties. What would be the result, for instance, if a stand of forty-eight Dahlias was composed partly of fancy and partly of show kinds, and another stand was wholly composed of show varieties? The answer is obvious.

I should like for all Pansy fanciers to read the characteristics of a good Pansy as described in "Florist's Flowers," sent out from the office of your journal, and they will there find what constitutes a good flower. I will quote the last characteristic, No. 7, as some of your many readers may not have seen it:—"Ragged or notched edges, crumpled petals, indentures on the petal, indistinct markings or pencillings, and flushed or run colours are great blemishes; but if a bloom has one ground colour to the lower petal and another colour to the side ones, or if it has two shades of ground colour at all, it is not a show flower; the yellow within the eye is not considered ground colour." That is what constitutes a good Pansy, and not the same as some your correspondent exhibited at Nottingham.—C. R., *Notts*.

PETUNIAS AND THEIR CULTURE.

THE Petunia and Tobacco do not at the first glance appear to be relatives, yet Petunia and Nicotiana are genera placed in the same natural order—Nightshades (Solanaceae). The very name, indeed, of Petunia is derived from the Brazilian name for Tobacco (*petun*), hence lovers of the "weed" should have a certain amount of respect for Petunias apart from their intrinsic beauty.

In very few plants has the improvement been so great and so

rapid as in *Petunias*, and it is a question if they are cultivated so extensively as their merits deserve, either as decorative plants for the flower garden or as specimen plants for the conservatory. Only a very few years ago the large flabby single purple *Petunia phœnicea*, and a flimsy-petalled dirty white flower (*P. nyctaginiflora*) were the sole representatives of bedding *Petunias*, but from these two species varieties increased rapidly after the ardent and indefatigable Donald Beaton first "broke the ice."

P. phœnicea was the first plant that Mr. Beaton took in hand for the purpose of solving a botanical problem and determining to what genus the plant really belonged. At that time doctors

differed on the point; one regarding the plant as a *Salpiglossis*, another a *Nierembergia*, and a third a *Nicotiana*. But with none of the representatives of these genera could the experimentalist obtain a cross, while with the old *Petunia nyctaginiflora* the typical purple *Petunia* crossed most readily, and the true genus of the plant was determined. New varieties now increased apace, *Shrubland White* and *Shrubland Rose* proving lastingly useful for bedding purposes; and it is a question if the latter has ever been (in its colour) superseded for massing, although *Countess of Ellesmere* is deeper in colour, and both come tolerably true from seed.

About twenty years ago a little "stir" was made in the



Fig. 23.—DOUBLE FIMBRIATED PETUNIA.

horticultural world by the announcement of a double white *Petunia* (*Imperialis*), sent out, I believe, by Mr. E. G. Henderson. This was expected to prove a valuable bedding plant, a character which it failed to attain; but it was largely cultivated for conservatory decoration. Other double varieties now followed in rapid succession, and a batch of English-raised seedlings (by Mr. Scott), which flowered in Mr. Beaton's experimental garden at Surbiton in 1858, were designated by their owner as the "royal family of bedding plants," from the fact that the varieties were named after the different members of the Royal Family, and had the high honour of a special visit from the Queen, Prince Albert, and the whole of the royal children, who called on Mr. Beaton at his house at Surbiton to see the new plants. That was sufficient to render *Petunias* fashionable, and there was "quite a rage" for them at the time, the rage—as rages often do—ultimately subsiding, and *Petunias* again fell into abeyance.

Petunias, however, have always been more or less cultivated, although they have been for a length of time quite overshadowed by the ever-increasingly popular *Geraniums*. The

Geranium fever, in turn, appears now to have reached its height, and *Petunias* once more have an increased measure of attention accorded to them; and well are they worthy of that attention, for few plants are more beautiful—bold without being gaudy, delicately perfumed, and easily cultivated.

A great advantage pertaining to *Petunias* is that they are readily raised from seed, and flower profusely when treated as half-hardy annuals. Double as well as single varieties are grown in this manner; the seed of the former being saved from semi-double flowers (the same as *Balsams*), and from this seed a certain number of plants are raised with flowers as double as *Camellias*—some with smooth petals, some serrated, some margined with a second colour, others veined, and the rest selfs. These are not adapted for bedding, but they are admirable for greenhouse and conservatory decoration during the summer months. They can, of course, be also increased by cuttings, and the best varieties should be thus perpetuated, at least until they are superseded by improved forms.

One of the finest collections of *Petunias* which I have seen is possessed by Mr. Cannell at Swanley, to whom I am in-

debted for the accompanying illustration of a seedling fringed variety, which shows the effectiveness of this type of flowers. Half a dozen superior named double varieties are Beauty of Clapham, white veined with pink; Snowball, white; Diamond, white suffused with pink; Patroones, white flaked and mottled with purple; Prince of Wales, white and violet; and King of Crimson, a fine rich self.

But the singles are as valuable as the doubles for cultivation in pots, while for bedding, especially in light soils and sunny positions, they are invaluable. For producing a rich dark bed, purple shaded with crimson, few plants can surpass Spiffire. Magnificent beds of this Petunia were produced at the Crystal Palace a few years ago. Shrubland Rose, as before mentioned, makes a pleasing mass of a distinct colour. But perhaps the most striking effect is produced by planting large masses of the margined and veined varieties in mixture—plants raised from seed. The "latest improvements" of these striped and marbled Petunias are very decided, and those who have not grown them have a treat in store.

The seed requires to be sown in pans at the present time and placed in gentle heat until the seedlings appear. The plants should then be placed near the glass in a light house or frame, having a temperature of 50° to 55°, and then be pricked-off in boxes or small pots to become established, subsequently to be removed to cold frames to harden preparatory to being planted out.

The soil should be light and rich, and should be well watered before the seed is sown. It should be sown thinly, very thinly, and be covered slightly and shaded until it germinates. Petunia seed is almost invariably sown too thickly, and the seedlings are retained too long in a high temperature before being transplanted, and a weakly growth is consequently fostered. Thin sowing, light air, and a genial temperature are the essentials for producing sturdy growth and satisfactory plants.

Plants raised from cuttings require much the same treatment, in fact precisely the same after roots are emitted; until then brick heat and shade are necessary.

The cultivation of plants in pots is very simple. Sound loam enriched with decayed manure, and rendered porous if necessary by an admixture of sand, will grow the plants admirably. They must not be overpotted, for Petunias are rather tender-rooted plants. Neither must they become pot-bound before being transferred to larger pots until the blooming pots are given. Attractive plants may be grown in 5 and 6-inch pots, 8-inch pots being large enough for specimens 3 feet in diameter. The plants cannot endure shade or a close atmosphere—"coddling" is fatal to success. They must have the lightest position at command, and abundance of air. They must be stopped frequently, not bruising the tips by roughly pinching, but cutting off their tops with a sharp knife. The habit of Petunias being naturally loose and straggling, stopping, tying-down, and training are operations which must not be neglected. Stopping may be continued until within six weeks of the time when the plants are required to commence expanding their flowers. When flowering manure water is necessary, and insects must be prevented by occasional fumigations.

Some of the newest named varieties are particularly attractive. Dr. Hogg has been justly compared to a Gloxinia, it is very distinct. Hon. A. L. Melville, Mr. Tillery, Mrs. Wright, Mrs. Shirley Hibberd, Miss Harrison, Captain Thomas, and Mrs. Wynne are striped and marbled in the most artistic manner, and if they prove constant will be very valuable for decorative purposes. It is only fair to say, however, that striped Petunias are sportive in their nature, and time is required to establish their permanency.—W.

ALPINE AURICULAS.

A SHADED body colour and deep yellow paste have hitherto been considered, in the north particularly, as the indispensable characteristics of a good Alpine. This year, I understand, flowers wanting in these points are to be permitted to be shown. It is not probable, however, that the discussion will drop altogether, and a few words on the subject may be opportune.

And first as to shaded colour. Among show selfs both shaded and non-shaded flowers are allowed; Martin's Miss Martin being an example of the former. It seems, therefore, unreasonable not to allow an equal diversity in Alpines—which of the two is preferable is a mere matter of individual taste.

As to white pastes, I object to them, not because they are

white, but for the reverse reason—because they are never purely white. They come out of a dirty colour, and bleach by degrees. Where the body colour is dark and rich as in Diamond the bright yellow paste is charming; but I have never seen this paste in flowers like Conspicua with violet tints. Bright yellow would not harmonise with these, and Nature, who paints with an inimitable pencil, accords to them (so far as I have seen) a custard-coloured paste. We must therefore either accept this or discard Violets altogether. The dirty white I have noticed above seems to arise from crossing the Alpine with a show self.—G. SPARKES.

NOTES ON VILLA AND SUBURBAN GARDENING.

RITCHIEN GARDEN.

It is noteworthy that the last half of this month and the first half of April is as busy a time as any in the year both for gardeners and amateurs. After arriving at the middle of March it is advisable to sow and plant as many crops as possible—that is, as soon as the ground is workable on the surface. Very little chance, however, has presented itself yet for seed-sowing, but all should be in readiness; and it may be that, owing to the wet, the soil will not work down well. We had last week two nights of frost, one of 8° and the next 11°, and if it had continued for a few more nights, though not so severe, much good would have been done to the soil. Wet days have succeeded the frost, and the soil is now worse than before.

The crops of Onions and Parsnips should be sown, also further sowings of Peas and Broad Beans should be made as soon as possible. A border must be prepared for several small seeds, such as those of Brussels Sprouts, Cauliflowers, Lettuce, Cabbages, Early Ulm Savoy, and Radishes. Turnips should always be sown in small patches until the middle of summer, as in garden ground they soon become hot and stringy. Asparagus beds should be made if any are needed, and the work should be done well, especially if they are to remain as permanent beds. The roots may be planted just as growth commences, and be covered over thickly at first, but to have a top-dressing of manure as they grow. Plant Horseradish if needed: it is not well to let a bed remain too long, or many small crowns are formed instead of large clean roots. Seakale, too, must be planted if a fresh plantation is required. Globe Artichokes must be attended to by removing all suckers which are not wanted, and levelling down the ridges of manure placed round the plants for protection, and digging it in between the rows. The suckers should be planted either to fill up the old bed or to make a new one. Now that the wheeling of manure is finished let the walks be put in order and have fresh gravel applied where necessary.

FRUIT GARDEN.

The trees are very forward. Apricots in the south have been in bloom some time, but where they have been protected by twigs of fir and laurel the frost has not injured them. One objection to the use of these is that in windy weather they blow to and fro and rub the blossom, or even knock it quite off. Hexagon netting fixed to the top of the wall, and pegged down at the bottom a little distance from the wall, is better than fir boughs. There is a very good show of bloom on most kinds of fruits, but particularly on trees which produced sparingly last year. Doyenné du Comice, Bergamotte Epereen, Easter Pear, Doyenné d'Etampes, Alford, Grosesne, Winter Neli, and Glout Morecan are prolific among Pears; and of Apples Lord Saffell, Stirling Castle, Cellini, Hawthornden, Searlet Nonpareil, Blenheim Orange, and several other sorts are very full of fruit buds. Plant early Melons as soon as possible; they need particular attention in the matters of heat and ventilation. There are numbers of sorts to choose from, and most of them good. In vinerias where the buds are breaking a little warmth must be given, and the temperature kept regular but by no means high for the present. Mr. Douglas, who is an excellent Grape-grower, narrates his treatment in such a practical way that if his weekly advice is followed few failures will occur.

FLOWER GARDEN.

Plants for the flower garden should be prepared as rapidly as possible. Geraniums which have been wintered in pots or boxes should now be potted singly in small pots, and be afforded a genial temperature until established, and then be removed to cold frames. Cuttings strike freely at this season if placed in heat and not shaded, but they do not flower so freely as autumn struck plants. It is only, therefore, advisable to propagate those more variegated sorts which are grown for the beauty of their foliage; and of these, plants raised in spring are equal if not superior to plants raised in autumn. Cuttings of Verbenas, Heliotropes, Ageratum, &c., require to be inserted in sandy soil, and be placed in a brisk moist heat and shaded until rooted. Plants of these, also of Petunias and Lobelias, may be raised from seed, sowing at the present time, so that the plants may have as long a period as possible to attain strength before "bedding-out time" arrives. Very useful is Verbena venosa, seed of

which should be sown at once by those requiring plants. The sowing of Stocks, Asters, Zinnias, &c., may be deferred, especially by those having limited farm conveniences for growing the plants. A bedding plant that deserves to be better known and more generally cultivated is *Leucophyton Browni*—a bright silvery-flowered plant with wiry stems, and growing about 4 inches high. It is excellent for carpet bedding, and is a tall plant among *Alternantheras*. I struck my plants last autumn with *Verbenas* on a spent dung bed, and now I have just potted them from the cutting pots. I shall grow them on as fast as possible in a close frame, and take cuttings from time to time and plant these out also. Pegging down is not needed if the plants are planted closely together and properly grown, but there will be a few shoots rise above the others, which must be cut off. As a dwarf-growing silvery-flowered plant it is worthy of a place in all flower gardens.—THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

As soon as the weather permits a sowing of Broad Beans and Peas will be made. For the largest-growing Beans the distance between the rows ought to be 3 feet, and for those of lesser growth 2 feet 6 inches. There are some who plant Savoys or Cabbage plants between the Bean rows, in which case they may be 4 or 5 feet apart. It is a good plan, especially in wet districts, to sow the Beans on turf placed in shallow boxes and plant them out after they are started. This system admits of a longer period in which to prepare the ground, but it is certain that they will not do well unless they are grown in a well-ventilated place and near the glass. The boxes should be placed out of doors for a few days before planting-out the Beans, which should be done in a careful manner, so that the roots may not be disturbed any more than is absolutely necessary. Peas may be treated lightly in the same manner as Beans. We generally sow the early sorts 3 feet apart, and late sorts 3 feet 6 inches. Peas which were raised under glass may be planted out either next week or the week following, according to their size and the state of the weather. If the soil is wet a little dry loam placed round the roots will be highly beneficial.

We have pricked out spring-sown Cauliflower plants, Early London and Walcheren. For our purpose a large quantity of plants is not required, hence we find it convenient to grow them in boxes; but when a large number must be raised the best plan is to prick out the plants on a prepared hotbed, not a steaming heat, but just warm enough to start them into free growth. They should be pricked out as soon as the seed leaves are fully developed, and after having grown a little air must be given, increasing it until they can bear almost full exposure, taking care, however, that growth is not materially checked during the preparing process. With us spring-sown Cauliflowers are ready for use from the middle to the end of June, those sown in autumn being ready about three weeks earlier. Another sowing should now be made on a warm border to succeed those sown under glass and brought on by its aid.

Parsley may be sown to form edgings for borders, and, if a good strain is obtained, the lively green beautifully cut leaves are very ornamental. When a very large supply is wanted sow in open ground in rows from 9 inches to a foot apart. No time ought to be lost in sowing Parsnips; if the ground requires manure it ought to be placed a foot below the surface, for if mixed with the soil the roots are very likely to be badly forked. We have planted out Spinach between the rows of Peas. We have planted out Onions from seeds sown in autumn. Our soil has a tendency to breed maggots, but the autumn-sown crop never suffers. We generally sow the White Spanish in autumn, and also a few in spring; but the best to keep are *James's Keeping* and *Brown Globe*. Onions are not yet sown, but they will be at once. We sow in drills a foot apart in preference to beds. As soon as the weather is fine and the ground is in good condition Carrots will also be sown in drills 1 foot apart. All small salads after this may be sown once a week, such as Cress, Radish, Rape, Mustard, &c. The kitchen garden ought now to be put into first-rate order; all the litter that has been used as protecting material during the winter should be removed, Celery trenches should be levelled, and any leaves that have been left on the ground should be carried to the rubbish heap. The gravel walks have been put in order by being relevelled. This was done two months ago; we would rather have done it this month, but it is not possible to crowd such work into March.

VINERIES.

Here we have plenty of work requiring the young growths into position. We have frequently said that the lateral growths should be stopped two leaves beyond the bunch. This is the rule, but in all vineries there are exceptions, sometimes owing to an occasional spur not starting, or a blank space occurring from any other cause; the laterals may be allowed to run to the third or fourth leaf beyond the bunch to fill-up the space.

On the other hand, if any part of the roof is likely to be overcrowded with leaves the growths may be stopped at one leaf from the bunch. When young rods are being trained-up to take the place of those which have become unsightly with long gnarled spurs, the leaves of the young rods should be well exposed to the light. It is certain that they cannot make good growth underneath the laterals of the old rod. Those who would grow first-class Grapes must not be afraid to thin-out the lateral growths; a good Grape can be produced when the Vines are a thicket of wood and foliage.

The Vines are in flower in the early houses, and increased vigilance is necessary to preserve them from injury. Cold cutting winds are apt, if allowed to blow direct on the bunches, to produce rust when the skin is tender. It is necessary to go over the bunches twice a day and gently shake them when in flower. Some gardeners lower the temperature of their vineries at the time the Vines are in flower and have been successful. We have generally raised it about 5° more than it was previously, and have found this plan to answer. Moisture is also withheld to a considerable extent.

Where Vines are grown in pots for the earliest crop they will now be in full growth and making roots freely. The roots must on no account suffer by want of water, and besides the surface dressing already directed to be given, every alternate watering ought to be with weak manure water to syringe, and it is considered objectionable to have sulphur formed into a paste by mixing it with soapy water. The pipes require to be heated to a considerable extent to maintain the requisite temperature for the remedy to be effectual.

Many growers are complaining that their earliest Vines are starting very irregularly, and this is not to be wondered at, especially where the roots have been under water. That was the position of our Vines, and it has only been by fixing powerful pumps, which are even now constantly kept at work, that the stakesholes have been kept free from water. The Muscats did not start well, but the reason was suspected, and the night temperature was kept down and they are now doing well. When it is ascertained that Vines will not break regularly they ought not to be pushed, as this only makes matters worse; lower the temperature to say 55°, and when the shoots have grown a little increase it to 65°.

FLOWER GARDEN AND SHRUBBERY.

By this time all alterations should be completed, such as forming new shrubbery borders, or releveling lawns by cutting the turf, and after making the ground level releveling it. This is a good time to prune the shrubs, especially *Portulac* and common Laurels. In our light soil, where the ground has been made rich by manuring, common Laurels grow with great vigour, but they do not last long in good condition unless they are periodically pruned; the under branches die and the plants are rendered unsightly, whereas if systematically pruned the bushes become regularly furnished with healthy branches. Large bushes which have been allowed to grow wild may be cut back to within a few feet of the ground, and they will start again into free growth from the old wood. *Portugal Laurels* may be treated in the same manner, but they do not run away into naked wood like the others; indeed, there are few more noble-looking objects to be seen in the pleasure grounds than large bushes of this shrub, and they may be seen in many places clothed with foliage from base to summit. If there is any planting still to be done it ought to be finished without any delay, and newly planted bushes should be mulched with manure. This is excellent for preventing evaporation and keeping the ground of a more equable temperature.

If lawns are poor now is a good time to dress them. An excellent dressing is wood ashes, guano, and fine soil in equal parts. A dressing applied now and in a month hence will cause a most vigorous growth. The fine weather has made the grass to grow very strongly, and we have rolled frequently and run the lawn mower over the grass twice. In a few weeks the walks will be relevelled or the old surface will be forked up, raked, and well rolled down again.

Although the Roses had made growths 2 or 3 inches in length we deferred pruning as late as possible owing to the danger to be feared from frosts. We had pruned half of them when frost did set in, Fahrenheit's thermometer registering on one occasion 11° of frost—quite enough to blacken all the growths on the unpruned plants. Frost suddenly disappeared on the evening of the 1st of March, and rather more than quarter of an inch of rain fell, when the pruning was finished; we then commenced to dig over the borders.

No time should now be lost in inserting cuttings of bedding plants that are likely to be required. Of many quick-growing plants cuttings struck in spring are more useful than those propagated in autumn. We shall shortly place the hardiest plants in a turf pit, which will give us more room for those which are being grown-on in warm houses.

FLORIST FLOWERS.

Tulips start very early into growth, and owing to so much

mild weather are in a forward state. They do not suffer from frost unless, as not unfrequently happens, water gathers in the axils of the leaves and freezes there. When the ground and leaves are quite dry they are safe. Auriculas are growing freely and require attention to ventilation. We found it necessary to double-mat the frames at night, and when the frost was most severe the leaves were even then crusted with it. Carnations and Picoetes have been potted into their blooming pots. Many growers pot their plants into 11-inch pots, three plants in a pot, or two in a 10-inch. Ours are mostly potted in 7, 8, and 9-inch pots. They are quite large enough to grow the plants; but there is this objection to them in the case of those who are away from their gardens in the daytime, the plants are more liable to suffer for want of water in hot weather. When large pots are used they do not suffer from this cause; moreover, there is sometimes not sufficient space for the layers in small pots. These plants require plenty of drainage, and the potting material should be good turfy loam with one barrowload of leaf soil and the same quantity of decayed manure to every five of the loam, a little slives and bone added if necessary. The plants require the protection of glass frames for a month longer at least.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

James Carter & Co., 237 and 238, High Holborn, London.—*Illustrated Catalogue of Price Farm Seeds.*

Thomas S. Ware, Hale Farm Nurseries, Tottenham, London.—*Illustrated Catalogue of Hardy Perennials and Florists' Flowers.*

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Farm Seeds.*

TO CORRESPONDENTS.

All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

CYPRESS PLANT.—"E. P." asks for information in reference to the Cypress plant which grows in America. He has had some seeds given to him received from America, and wishes to know something of the habits and nature of the plant, and whether it will grow out of doors in this country or requires a greenhouse or stove. It has a pretty small flower. The chief attraction is in the leaf, which is beautifully coloured.

VINE LEAVES SPOTTED (L. D. E.).—We fail to perceive any spots on the foliage seen. There are some slight brown blotches which may be attributable to a sudden outbreak of sun after a period of dull weather. The leaves suggest although it is difficult to judge in their early stage that more yet judicious ventilation, and also a stimulant to the roots either in the form of manure or tepid manure water, would be advantageous for the purpose of improving the substance of the foliage, rendering it less liable to injury from changes of temperature or insect attacks.

LAWN SAND (Chemist).—We do not know of what it is composed. Any small mowing machine will cut the grass on banks.

GREENHOUSE RHODODENDRONS (A. E.).—The plants will not "throw" side branches until the terminal bud has become a flower bud, or the apex has removed. We have several plants which were growing up, years appear to be doing, with a single stem; we cut them down to 6 inches, and they are now furnished with shoots at that height. Cut them back to the height at which you require side shoots, taking care to notice whether they are grafted, in which case sufficient wood must be left, or the plants be cut to furnish fresh shoots. Keep rather dry until the plants begin growing again. They should be cut back at once. If you want the plants with stems of the present height of plants the removal of the central shoot or terminal bud will cause the formation of side shoots.

CUCUMBERS AND MELONS IN COLD FRAMES (F. I.).—The boxes you name are much too small, and are also needless, for there is no dirt arising from manure or soil that would injure the frame in the least, or only what could be washed off. It would cost less to line the frames inside with a deal board, half-inch thick and 11 inches broad, than to make boxes and a trellis. The half-inch boards would keep the sides of the frame clean. Put in the frames enough of the best manure, consisting of fine soil, 12 inches deep in the centre of the frame, diminishing gradually to 6 inches at the sides, and upon the dung place 6 inches depth of soil, and tread it very firm for the Melons, and moderately so for the Cucumbers. The soil should be a strong loam for the Melons, but medium-textured for the Cucumbers. The seed should be sown in gentle heat the first week in April, and the plants be potted singly in small pots when they show the rough leaf, and have their points pinched out when they have made two rough or second leaves, planting out in May. One plant in the centre of each light is sufficient. Telegraph is a good Cucumber, also Humpy and the variety of Telegraph, and Little Heath Melon will suit. Van Noitke Melon, scarlet flesh, is also a very good kind for cool treatment, and if you want a green flesh Easton Castle is good and free.

CLEMATISER AND TEA ROSES FOR LOW WALLS (Helm).—Clematis.—Mrs. G. M. France, Thomas Tonnent, Alexandra, Victoria, The Shah, and Madame Van Houtte. Tea-roseed Roses.—Duchess of Edinburgh, Gloire du Dijon

Catherine Mermet, Madame Level, Marie Steley, and Sombrell. We should have the Roses upon the west end of Clematis upon the east aspect. They would not do together. Passiflora coriacea succeeds against a south wall, and would probably thrive in your mild climate upon the east aspect.

PLANTING AMARYLLIS OUTDOORS (J. W. G.).—You may plant out all the species named—viz., A. atamisco, A. (Crinum species) longifolia, A. Belladonna, A. formosissima, A. lutea (Stenbergal), but the Asparagus should not be planted until May. There is no reason of frame, or to carry the glass, or it may be laid upon the soil over the bulbs until the growth appears above ground. There is no work of recent date treating of the cultivation of these plants.

SUCCESSIONAL CROPS OF MELONS (W. H.).—It is not desirable to have plants planted at intervals in the same house. Your house will only accommodate four plants, one under each light, and these we should plant at the same time, so as to have the fruit set, and ripening at about the same period. You will find some difficulty in growing plants in various stages in the same house and border; besides, four plants will not give you over a dozen fruit at a crop, and will not ripen off within a few days of each other. Easton Castle is a very fine successful bearer. Ormsanton Manor, with more flesh; A. F. Barron and Read's Scarlet-flesh are the best of that colour.

TACSONIA INSIGNIS BRIGHTER (T. E. D.).—The leaves do not appear to have been injured by cold. The appearance is that of an attack of red spider, of which there are traces upon the upper surface of the leaves, a result, probably of the plants having been kept too dry during the summer. We should prune the plants now or thin out the shoots, removing the worst affected leaves. The plants do little good in pots, requiring to be planted out, and are then grand.

PARAFFIN OIL (A. L. W.).—Paraffin, according to the testimony of Mr. Horner, is injurious to the foliage of Auriculas unless the oil is greatly diluted. Mr. Dickson of Arkelton and other gardeners have also found it injurious to fruit trees when used in its pure state. We have not yet tested its effect on seeds. We infer that the paraffin will do good, but we do not know how after the seeds are put in, and advise you to have the same. We have had no experience with eriolite acid, but would like to know who has.

CULTURE OF VIOLETS (M. J. D.).—Violets are so easily grown and require so very little attention that they are often neglected. They are propagated by runners, and to keep-up a supply of healthy free-flowering plants a few cuttings to be planted annually on rich sandy soil. Yours have not succeeded because "you did nothing to them last year."

PLUMS NOT BEARING (A. E.).—You may graft them as you propose. We fancy the Frogmore Damson is now to be had in the "trade," and that is the only way in which you can obtain it. Apply to Mr. C. Turner of Sloagh. The shading will do admirably either to protect the blossoms from frost cuts, or the fruit from flies and wasps in summer. You must not leave it over the blossoms during fine weather.

OLIVERAND UNHEALTHY (C. E. P.).—The leaves set are much infested with scale, especially on their under sides. You may adopt one of the following remedies:—1, Dissolve 4 ozs. of soft soap in a gallon of water, and with a sponge wash every leaf thoroughly, further displacing the scale by drawing a blunt pointed stick down the leaves next the midrib. Wash also the stems of the plant. The solution should be used as hot as the hand can endure it. The work must be well and carefully done. 2, Cut down the plant at any convenient height below the foliage, and it will shortly push fresh growth, and you will have a clean plant which will probably flower next year. We have often removed the paraffin with a little sawing in, and replace with fresh compost. If you do not cut down the plant give more copious supplies of water, and liquid manure once a week. It is impossible for your plant to thrive until it is freed from the scale and the dirty encrustation. We recommend sawing in a worse state, and we advise you to be prompt with either of the remedies suggested.

SWEED (C. L. Langley).—Taken literally "a Sweed" is a human being, a native of Sweden; but if the term was applied to this cultivated bulb, that bulb is Turnip. It is described in botanical works as a variety of the Turnip under the name of Brassica campestris rutabaga.

NAMES OF FRUITS (Connaught Subscriber).—Stamford Pippin.

NAMES OF PLANTS (C. Callan).—Probably Arum dracunculoides.

POULTRY, BEE, AND PIGEON CHRONICLE.

AN UNITED POULTRY CLUB.

Our article of last week was in type before the Aquarium Meeting, but at that Show we had an opportunity of talking with many experienced fanciers on the above subject. The impression seems to be that one united poultry club would answer all purposes better than any associations for particular branches. Very probably this would be the case, as a larger number of fanciers would most likely be thus collected together who could take all matters of dispute or interest into consideration. Such a club, however, wants to be delicately handled, and for it to be a real and permanent success there must not be a breath of antagonistic feeling among the members, for should they once cease to work in harmony the good derivable from any such collection of fanciers would certainly be frustrated. Consequently the club must be formed and put into working order as openly and as publicly as possible, when all could give their own ideas and so enable the rules to be drawn-up with the approbation of all. We mentioned twelve gentlemen last week which had been selected at random from a recent catalogue, and we see no reason why the same should not still be the leading parties to try and start this club. We know that several of that number have the subject much at heart, and talked the matter over at Westminster among themselves the other day, coming to the resolution that the thing was feasible, and that they would help the matter on. A general impression, however, seems to exist that the subject should not be pushed on in too

great a hurry, but that time should be given to collect the opinions of all interested in the matter.

We hear that a meeting for the purpose of forming such a club was held on the last day of the Aquarium meeting, and that certain resolutions were adopted and a gentleman chosen to act as Honorary Secretary *pro tem*. We cannot help much regretting, as do so many more, that this meeting did not take place on an earlier day in the Show week, for by Friday so many of the fancy who are interested in the matter had left for home again, and surely the more that could attend a meeting where a subject of such general importance was to be discussed would have been the better. Still the resolutions passed, we hear, are not to be made public until they have been before another meeting, and so those who were present on that first occasion have still ample time to consult the opinions of others who were not present; for we know several important breeders and fanciers who will never allow themselves to be "idden over roughshod," and so if this meeting, held the other week, is to be the nucleus of the United Poultry Club, perfect openness and no secrecy must be employed.

We have seen a letter in a contemporary written by some one who was present at this meeting, saying that it was his "privilege to receive an invitation." We confess this word "privilege" astounds us. If this meeting was for the private interests of particular persons we can imagine the writer considering it a privilege to join such a coterie; but when it was held to consider the wisdom of establishing a poultry club to embrace all real and loyal fanciers, surely at a first meeting for the purpose no publicity could have been too great nor no number of fanciers too large to carefully take into consideration such an important matter. We say openly and with certainty, that once the matter is conducted secretly and among certain parties only, the Club will do ten times more harm to the cause than ever it will do good.

From the general tone of the letter to which we have referred we should think that it was written with the full approbation of the gentlemen present at the said meeting, although no names are yet announced. Whether this is so or not, we still take this opportunity of most fully concurring with one paragraph—namely, "It was deemed essential for the prosperity of the Association that it be entirely unconnected with any journal published in the interests of the fancy." We assent most cordially, for we are sure that this is important. There are, we conclude, however, persons in existence who read daily a penny paper who do not read the *London Times*; but again there are fanciers who read our pages who read no others which are devoted to poultry culture; and so we agree with the correspondent of our contemporary, and say that, fatal as it would be to make one journal *facile princeps* the organ for ventilating the Club movements, still it would be as damnable to it not to allow all journals to fully recognise the movement, and by ventilating the subject and recording the movements to help to form, collect, cement together, and amalgamate fanciers of poultry and of Pigeons. It is unison that we want—the joining together, for one common purpose, of all fanciers; and only by the absence of petty jealousies, by shelving former disputes and quarrels, by working together in true harmony, will the poultry fancy in their Club succeed. Meet earnestly do we trust that this may be the case; and fairly, firmly, straightforwardly stated, we do believe a poultry club which properly considers all subjects laid before it, will work a real benefit in the poultry world.—W.

THE LIABILITY OF RAILWAY COMPANIES.

A CASE of considerable interest to poultry and Pigeon exhibitors was tried at the Bradford County Court on the 23rd ult., before Mr. Daniels, Q.C., in which Mr. Thresh of Bradford sued the Lancashire and Yorkshire Railway Company for £1, which he alleged he had lost by the neglect of the defendants. Mr. Terry appeared for the railway company, and Mr. Thresh conducted his own case. The plaintiff stated that on the 22nd of September last he sent a pen of Spanish fowls to Chadderton Agricultural Show, Moston station, by the Lancashire and Yorkshire line, at 9.10 P.M., but instead of the birds arriving in reasonable time they were delayed until 12.40 P.M. next day, when the judging was over. The plaintiff now claimed £1, the amount of the first prize, and he called Mr. Dixon the judge, who stated that if the birds had been in time he should certainly have awarded them the first prize. Mr. Terry, for the defendants, contended that the company had entered into no contract for the delivery of the birds at any specified time. Mr. Daniels ruled, however, that the defendants, by allowing the fowls to be booked to the show, had bound themselves to deliver them in reasonable time; otherwise it would have been needless sending them. He therefore gave a verdict for the plaintiff for the amount claimed with costs.

BOURNEMOUTH SHOW OF POULTRY, PIGEONS, AND CAGE BIRDS.
—The defaulting Show to which "WILTSHIRE RECTOR" referred

was quite a financial speculation on the part of Messrs. Barnes and Co. of Portsmouth; and being held before the Winter Garden Company was in existence, or rather before the Winter Garden was built, it could have no possible connection with it. The Dog, Cat, and Rabbit Show held by the Company in November last reflected great credit on the promoters, and all claims were settled within a short time; I believe to the satisfaction of the exhibitors generally.—GEORGE BULLETT.

THE PATAGONIAN RABBIT.

THE Patagonian Rabbit is the giant of the Rabbit tribe; towering above all the other breeds, it stands unsurpassed and unequalled for size and weight. A fine full-grown and fat specimen of this breed will outweigh three small Dutch Rabbits. At this period, when butchers are "piling on the agony" and even passing the shilling-per-pound price, surely everything that can with advantage be brought into the meat market should be, and what can be more advantageously introduced than the mammoth Rabbit species? The Patagonian is not a Rabbit that a lady or child would select as a pet, as it grows awkward in appearance—the larger, and hence more valuable, it becomes the less graceful it appears. Still appearances are often deceitful, and "beauty is only skin deep," so I think we are right if we affirm what is corroborated when we say that this is the most valuable breed of Rabbits extant.

The Patagonian is indigenous to France and Flanders, and probably never saw Patagonia. The only possible claim it can have to the name is its size, and even this cannot be advanced as a very cogent one. Its importation into this country has never been accompanied with much success, as Rabbit fanciers are such thorough-going conservatives that as long as the Lop is present for them to experiment upon they will not welcome a stranger. So the Patagonian has been nourished and cultivated by a few only, and their cultivation has not resulted in improving the breed much, as it is no better now than it was ten years ago, and foreign blood has been so freely introduced that the thorough-bred Patagonian is seldom seen in a rabbitry. In France, however, it is different. The present do not carry away many francs for their wares, and so, instead of grumbling and joining unions, they save what they can, rent a small piece of ground, and keep such animals on it as they can. If large, some of the larger and more valuable animals are kept; but if the land and resources are at once small Rabbits are taken to, and found to pay admirably. In this case Patagonians are almost always selected because of their great size, and because they eat but little more than their smaller brethren, and certainly require much less attention than their fastidious relatives the Lops.

Having briefly mentioned the nature of the breed as an article of commerce, we come next to its characteristics. The Patagonian should be as large as possible—large all round—that is, long and broad. Controversies on the size question are very fashionable among Rabbit keepers, but it is an admitted fact that size in a Patagonian is the great criterion. But this is not all. We must have something more besides size; we must have shape. The frame of the Patagonian should be roomy and bulky. The head should be large and bull-dog-like—that is, the face should be broad and the nose somewhat stumpy. When in condition the cheeks will swell out a good deal, presenting a heavy look from the front. The eye should be large and bold, and if it does not glow, sparkle, and look full, it is certain that the animal is in bad health. The ears should be very long and heavy. In a Lop length, thinness, and grace are the attributes of the ears of a good specimen, but with a Patagonian it is different; length, breadth, and thickness—or, to sum up in one word, massiveness—are required. I admit that in an animal reared for pot purposes the ears are not of vital import, but still as the type of breed they require attention. They must stand up from the forehead in an upright position, the muscles being strong enough to effect this. The ears, however, are too heavy (top-heavy is perhaps the correct word) to remain perfectly upright, so that they gradually drop outwards. Thus a person standing in front of a Rabbit of this breed can see between these organs with ease. The neck is generally short and heavy, and the shoulders are set wide apart. As a matter of course the legs are similarly placed. From the shoulders to the hips the sides gradually extend outwards, and the back rises. The hind legs are very long, and are set a considerable distance apart. They are also very thick and heavy. The whole formation and shape then, is heavy and massive.

The fur is very thick, and about the same length as the Lops, or perhaps a trifle shorter. The ears are covered with a profusion of hair on the outside, and on the inside are generally blackish, and not very pretty. The fur on the head is not so long as on the body, and generally of a softer quality.

The Patagonian presents neither beauty nor variety to the eye, but is of one regular colour—a dull heavy grey, or more correctly speaking, a very dark greyish brown. A wild Rabbit is generally called grey, but it is not really grey at all but

merely brown, of a more or less grayish shade. The Patagonian is much darker than the wild warren Rabbit. If a pencil be drawn up its back it will be seen that there are a large number of black hairs predominant, and these give a dark shade to the fur. The colour, then, of the breed under notice is dark grey, as it is orthodoxly called. The head is generally inclined to be a little darker than the body, and this is no detriment. The under parts are lighter, sometimes almost white, and although there should not be too much of it, a specimen will rarely be seen without it. There should not be any signs of sandiness either above or beneath, but the junction of the two colours should be light grey.

The points, then, are these:—Massive frame, with rump considerably larger than fore quarters; large head; large and semi-pendant ears; dark grey body and head, and light underparts. The light colour should not be discoverable, except upon examination. When in a reclining position the animal's sides gradually extend outwards, presenting from the front a form of a capital V.

The Patagonian is not very docile, but is not by any means aggressive. While not fond of caressing, it may yet be taught to know and recognise its feeder, and is moderately sociable. The doe is fairly prolific, though not so good in this respect as the smaller varieties. About three litters a year, and from three to five in each litter, may be confidently looked for.—GETA.

HEDGEHOGS.

THOUGH fully agreeing with "WILTSHIRE RECTOR" in his remarks respecting the preservation of and kindness to all dumb animals, I cannot quite endorse his statements, quoted from a French paper, as to the harmlessness of hedgehogs. I can bear witness to the fact that they are sad thieves of eggs, even climbing low shrubs to obtain the eggs of small birds, and also robbing partridge nests. Some years since our men were removing some timber; underneath the logs was a hedgehog's nest with several dozen eggshells in it of all kinds, and a litter of young hedgehogs about a month old. I have also had these animals so tame in the house that they came when whistled for, and the greatest treat they could have was a fresh-laid bantam egg. I have no doubt they, like all other animals, are most useful in their way, but, like the graceful squirrel, requires keeping within bounds.—AN OLD SUBSCRIBER.

THE CRYSTAL PALACE BIRD SHOW.

(Continued)

CANARIES and Males numbered considerably more than one-half of the entire Show, most of the principal breeders and exhibitors being represented with their best peppered and non-peppered birds. There was an immense competition in the first half-dozen classes (especially the "Clears") for the honors and extra £1 given to the highest winner in the Norwich peppered classes. Messrs. Mackley Bros. of Norwich were the victors. In the half-dozen classes there were 291 exhibits, averaging nearly fifty in each class. The other classes throughout the exhibition were well represented.

The principal prizetakers in Class 1 were Mr. John Adams of Coventry, whose famous champion Yellow (a bird full in size, and possessing colour, condition, and all essential qualifications for an A1 show bird) succeeded in winning first honours in its class at the best show ever held at the Palace. We assert this without the slightest reservation. This may be considered as one of the greatest victories in the Show, Mr. Adams's bird having to compete in its class with seventy-seven others, most of them really fine birds in the eyes of numerous observers as much like the others as the others were like them. Other noted exhibitors brought forward their high-coloured beauties, notably a couple belonging to Mr. R. J. Pope of Brighton, the lesser-priced bird of the two running Mr. Adams's top-sawyer a closer race than we have known any other Yellow bird to do during the past season, although Mr. Adams has had his bird placed second on more than one occasion. Mr. Pope, however, took a second and a third; Messrs. Cox & Griffin of the Northampton school splitting the pair for an extra second place, and keeping up the lusting reputation of the town noted for its high-beeled steppers. Mr. J. C. Salt of Burton with his very hot eight obtained an extra third position with No. 12, not his highest priced bird, which lacked thorough condition compared to numerous others in the class. Whether Mr. Salt's No. 10 (very highly commended) be the identical bird or not which gained him a first and extra prize at Reading Show a week or more previous, we are unable to say. Mr. G. E. Russell of Brierley Hill, Staffordshire, scored a clever fourth; Mr. Athersuch of Coventry fifth; and Mackley Bros. of Norwich an extra fifth. With so fine a lot of birds in the above class to dispose of for prizes, the task of awarding them must have brought into requisition much close attention, from the fact of an hour and a half fully being devoted to judging the Yellow.

In Class 2 an almost equally difficult task had to be encountered

over the sixty-six Buffs. The first prize was awarded to a most magnificent type of a Buff, full of bloom, quality, and in the very pink of condition; in fact a great bird of its variety, and one doing credit to Mr. Athersuch, who likewise gained an extra third and an extra fifth with other meritorious specimens. Mr. Galey of Clapham took a clever second and equal fourth; Mr. Russell an equal second; Mr. J. Caplin of Canterbury third; Mr. Yallop, Cossey, near Norwich, fourth; Mr. W. Havers, Norwich, fifth; and a similar degree of merit to Mackley Bros., which completed the list of prizewinners in the class. The competition in many instances was close, and the awards were doubled compared to the schedule.

The two "Clear" classes being disposed of, judging travelling became somewhat lighter, the classes were patiently gone through one by one. The "Even" and "Unevenly-marked" Yellows and Buffs were very showy; Mr. D. Audley of Leicester carrying off three firsts out of four classes, Messrs. Mackley and Athersuch being the next best winners.

The non-pepper-fed birds mustered well, and in most instances true in colour to the call of the classes. Mr. R. J. Troake's first Clear Yellow was very fine, and was well backed up with Mr. Pope's third, and Mackley Bros.' second and fourth, which latter exhibitors won first, second, and third in Class 8, Mr. Salt gaining Mr. Wallace's bird book for fourth honours. The first-prize bird in Class 9 certainly must have been a mistake, owing to the high pepper colour it presented. The Crested birds bore the usual, and we may say unusual, attractive markings and abundant crests, the chief winners being Mr. G. E. Russell of Darlington, Mackley Bros., and Mr. G. E. Russell.

As to the Belgians, they were not only high in their shoulders but high in their numbers, the chief winners being Mr. J. Doel of Plymouth, who scored a first (with immense shoulders) and equal third in Yellows and a second and extra third in Buffs. Mr. Rutter of Sunderland took no less than eight prizes in three classes—sufficient for any ordinary exhibitor, but insufficient for one of such extraordinary Belgian proclivities he possesses. Were Mr. Rutter permitted to get-up his own birds "against a wall," and not beneath the canvas tent provided, then perchance they would show to better advantage true Belgian form, which they failed doing owing to the queer ways they had (in several instances) of shooting out their tails and balancing their bodies upon their legs. We like to see a bird with good stand, small head, and sweeping neck, with close tail down to the perch, and hoisting up a well-filled pair of shoulders as high as it can get them. We much admired the general style of Messrs. Wright & Smethurst's second Yellow and first Buff.

Although there were twenty-eight entries in the two London Fancy classes, Messrs. J. & W. Waller of Finsbury, London, took the entire six prizes—not at all to be wondered at considering the style in which the birds were moulted and brought for exhibition. We know from experience that nothing is more difficult to achieve in Canary fancying than bringing out "London Fancy" birds in proper show trim.

We will continue our remarks next week.

AMERICAN APIARIES.

LIKE most things in America, bee-keeping is there commonly carried-on on a much larger scale than in England, and from the levithan honey-raiser, Mr. Harbison of California, with his three thousand hives, to the small bee-farmer owning but fifty or one hundred stocks, all use the frame hive, and more or less the extractor. The variety of patterns and dimensions of frame hives are endless; but the principle of all combs being moveable and frames interchangeable is fully recognised. I have before me a photograph, lithograph, and two woodcuts of different bee-garners, the first, where no exaggeration can be charged, to illustrate my present article. The spairy is that of Mr. A. I. Root of Medina, Ohio, well known as a bee-writer under the *non de plume* of "Novice," and editor of "Gleanings in Bee-culture," a monthly magazine wholly devoted to our hobby. Mr. Root is eminently an experimentalist—has tried all schemes of bee-keeping, most hives, engers, and feeding dodges; his manifold failures and successes all being duly chronicled in his Journal. It will be perceived that the hives all stand on the ground or nearly so, and this is the case in the other aparies as shown on the pictures I have. I should prefer some elevation both for comfort in working and for fear of damp; but perhaps their climate is drier than ours. Behind each row of hives is seen a trellis on which is trained grape vines, affording grateful shade to the bees and profit to the bee-master, as the Grapes in Ohio ripen readily thus cultivated.

The building in the centre of the picture is the bee-house, used both as a workshop and store. On the right of the house is a colony suspended by a spring balance, of which the daily loss or gain is noted, and which gives timely warning of a glut of honey when it occurs. In front to the left is seen the extractor, a busy machine here, for Mr. Root is one of its strongest advocates, although he has followed the times and lately gone in for sectional supers, of which he has kindly forwarded me some

neat and inexpensive patterns for our enlightenment. Mr. Root appreciates shade for his bees; but in most American apiaries the hives seem to be simply set down in open fields without any protection whatever.

Great attempts were made in the United States to institute a "standard frame," and there is one so-called; but the name is practically useless, for bee-keepers will use their own judgment as to the requirements of their bees and locality. The same question was discussed by the British Bee-keepers' Association for England, but recognised as impracticable, although I see

system of management. Throwing up such a cloud of theoretic dust may help to amuse Mr. Lowe; but has it not already blinded his ally—the patriarchal Mr. Pettigrew—to publicly disown "his sin true love," the big straw skep, and actually embrace at his champion's bidding the empty wooden boxes from the grocer's shop? To help to allay this dust I would put one or two questions.

Would Messrs. Lowe and Pettigrew kindly state the extent of their experience (if any) of this Stewarton hive and system of bee management? So far as the records of the apiarian comb



Fig. 24.—AMERICAN APIARY.

two hive-makers advertise their wares as the "standards." It may ease the minds of straw hivists here to know that the Yankees are too 'cute to go in for expensive hives. Most of their hives cost no more than \$2 or \$3, and frame hives in England need not cost more for profitable working; indeed, they may be had quite as cheap as Mr. Pettigrew's excellent large skeps, with their floor-boards, supers, and covers.—JOHN HUNTER, Eaton Rise, Ealing.

THE BATTLE OF THE HIVES.

IN this controversy we have already pointed out to Mr. Lowe it lies not between all hives and systems of bee management, but simply two—the Stewarton and the straw—for comparative honey results. We may, therefore, be pardoned if we ask the practical utility of all your correspondent's verbiage meanderings, this mere play on the meaning of words, this hive *qua* hive, this word-splitting attempt to sever the hive from its

show they have none. I would ask further if they have ever even seen a well-managed 46-inch octagon colony at work? May their position not be similar to my respected friend President Bennet, who had the frankness, as well as the generosity, to record in these pages that in my apiary the last summer "he had been introduced to a phase of apiculture of which he had previously no conception." Admit this till we are informed to the contrary, and does it not savour somewhat of presumption that either gentleman should pass judgment on what they have no experience whatever? But, says Mr. Lowe, look at our backers, Messrs. Abbott, Symington, "B. & W.," and all the authorities; only think, "Bevan, Golding, Dunbar, Jardine, Langstroth, Huish, and Taylor, and many others I could name." So far as the apiarian records show the first two gentlemen—Messrs. Abbott and Symington—have no experience of the Stewarton hive; and as to Mr. Lowe's sole supporter, "B. & W.," all we remember of his connection with that hive was in his making a reference during the "superposing" controversy in an

article of his we read on a railway journey, wherein he referred to the "crown board" of that hive, feeling evidently posed as to its position, and at a station we passed a hurried reply, and at the moment forgetting your much-valued contributor was not a brother Scot, used as the aptest phrase that came to hand that of "taking the brooks off a Heeladman," which we ever regret, as he has never alluded to the Stewarton since, consequently we may assume his experience is alike limited. "But you quite forget the authorities," says Mr. Lowe: "are they not grand?" We have as much respect for anyone for the honeyed names; but would your correspondent at leisure quote the passages from all or any who refer to, much less condemn, my favorite hive the Stewarton?

Before closing have been asked to reply to fresh queries about my competitive straw hive. What a fund of information has been dug from its recesses! how many have been taught! It is positively refreshing how the informer has been re-informed therefrom. Mr. Lowe finds fault it had not been wrought *la Pettigrew*. Now, I beg to acquaint him and all readers my aim is to produce as much super honey as possible from my stocks. Thought I had already mentioned, had it been so wrought strictly on such principle two swarms would have emerged, and the "honey result"—the contents of the beautiful glass which so enamoured the table of my friends—would have been frittered away in the construction of the comb of aforesaid frames, which (1875) was so had a season here they would both have died before autumn unfed, as well as the parent; but Mr. Rainford thinks what a gain there would have been had the hive been a full-sized *Pettigrew*. Similar if not worse results would have followed. The honey which I did manage to divert owing to the comparative small size at first *la Stewarton* to the super would have disappeared in comb-building in the *Pettigrew*; and so successfully was it managed the lightness of the body bore indispensible proof, a task Messrs. Lowe and *Pettigrew* will find not quite so easily accomplished when they take to stori-fying. For fuller information as to the evils attendant on employing too large straw skeps in a poor district, I refer Mr. Rainford to an able article by an esteemed correspondent, "R. S." vol. xxiv, where he will find that that gentleman was obliged to entirely abandon them, yielding little else than bees and empty combs in his county (Dumfriesshire), a much better than ours. As to this hive Mr. Lowe farther remarks, "I had no idea that so advanced an apianist as 'A RENFREWSHIRE BEE-KEEPER' would have such an antiquated piece of furniture in his apiary." For once Mr. Lowe has guessed right; not exactly my style, an incomer from his friend Mr. *Pettigrew's* native county of Lanark, one of three purchased there unseem. When they came I did think that however universal Mr. *Pettigrew* supposes his large skeps to have spread over Scotland, "a prophat is not without honour save in his own country," as of old.—A RENFREWSHIRE BEE-KEEPER.

[We have been obliged to omit part of the above communication from want of space.—Eds.]

STRAW SKEPS VERSUS BAR HIVES.

In the *Journal of Horticulture* of October 12th an account was given of the harvest of super honey which I obtained from one set of Stewarton boxes—*i. e.*, 144 lbs. of perfectly pure virgin honeycomb. A brief narrative of the subsequent history of the hive may interest some of your contributors. The two last supers were removed early in August, and the stock then occupied three 7-inch body boxes. They remained undisturbed until October, when it became necessary to prepare for their winter campaign.

The lowest box was first removed. This had been given to the bees as an empty box early in June. It was quite full of comb, but contained scarcely any honey. Out of eight combs the two outer are attached to 1½-inch bars, and are intended only for the storage of honey. Four of the interior combs were composed exclusively of worker cells; the remaining two combs were about half drone and half worker cells.

The upper box was next overhauled, and proved to be almost completely filled with sealed honey and pollen; there was hardly an unsealed cell in the whole box. The four central frames were removed, and after the bees had been shaken and brushed off the combs the lids of the cells were sliced off, and the combs put into one of Abbott's centrifugal extractors, and 6 lbs. of honey was thus obtained. All the pollen, and a considerable quantity of honey owing to the comparatively low temperature, remained in the cells; but the combs thus relieved of a portion of their superfluous treasure were then returned uninjured to the bees. The centre, now the lowest box, was finally examined: it contained a considerable store of honey, of which a large portion was unsealed for present use.

From this single colony I thus obtained in one session 144 lbs. of pure virgin super honeycomb, 6 lbs. of fine run or slung honey, and a box of excellent empty comb, which can either be returned to the bees as it is, or be used as guide comb for new stock combs. In addition to this, the colony which has yielded this harvest is

still amply provided for and will not require any feeding. In 1875 this colony, as previously stated, yielded about 80 lbs. of super honey and required no feeding after one of the worst honey seasons ever known in this district. Mr. *Pettigrew* seems to make light of this; but had he been in this locality he would have found numbers of hives, both stocks and swarms, dying of famine in the middle of July. No honey was accumulated after the middle of June.

In conclusion, I will remark that after the honey had been removed from the central combs in the top box, the bees who had previously clustered most densely in the box beneath ascended en masse into the upper storey, and, after they had cleared the combs and re-arranged their stores, took full possession of the box, and seem to have made it their quarters during the winter. Both boxes are, however, pretty well occupied. Last winter (1875-6) the bees occupied only the upper box.—J. E. BRISCOE, *Albrighton*.

OUR LETTER BOX.

Books (C. H. S.).—Davy's "Elements of Agricultural Chemistry," edited by Mr. Shier.

Address (J. Tomlinson).—We cannot state the address. If you enclose a stamped letter here and open we will forward it.
Admitts (C. C.).—We cannot name dealers. Go to any of the prize-winners and be your own judge.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32' 47" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.			IN THE DAY.				Rain.	
	Barom. at base of barometer and Sea Level.	Hygrometor.	Direction of Wind.	Temp. of Shade at Foot of Mast.	Shade Temperature.	Radiation Temperature.			
1877. Feb. and March.		Dry. Deg.	deg. deg.	Max.	Min.	In sun.	On grass.		
Wo. 29	31.169	84.2	27.4	N.	38.0	33.0	35.3	31.8	32.7
Th. 1	31.593	29.0	20.5	N.	35.8	41.1	38.5	37.4	35.5
Fr. 2	31.309	43.1	34.5	W.	36.3	43.3	38.5	34.0	29.0
Sat. 3	30.127	47.1	44.4	W.	40.5	52.6	42.8	40.0	41.7
Sun. 4	29.584	45.0	41.8	N.	41.5	47.0	43.0	69.0	32.8
Mo. 5	29.918	39.4	37.6	N.W.	41.1	40.4	34.2	31.9	31.3
Tu. 6	29.893	37.2	35.2	N.	41.0	44.3	32.7	68.6	29.5
Means.	31.181	38.7	37.2		38.1	46.6	32.9	74.8	31.4

REMARKS.

23th.—Very bright and fine all day, but the coldest day this year, taking it as a whole.

1st.—Colder after than the preceding day, but very bright and pleasant, getting gradually more warm toward night, followed by rain at midnight.

2nd.—Rain in night and early morning; fine from 10 A.M. to noon, after then 3rd.—Showery all day, and very warm. (damp and showery.)

4th.—Dull and showery all day, rather better towards night.

5th.—Very bright, with slight frost early, continuing bright end fine till 4.45 P.M., when it suddenly clouded over, and at 5 the darkness was almost awful; it only lasted a very short time, during which rain fell, and by 5.30 all was as bright as before.

6th.—Fine pleasant day, though rather cold early.

Mean temperatures nearly identical with last week. Sharp frost at the beginning of the week being compensated by considerable warmth on 3rd and 4th.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 7.

No alteration in our market worth quoting. Trade very quiet, and very little coming to this market.

FRUIT.

	s.	d.	d.		s.	d.	d.
Apples.....	1	1	0	Nectarines.....	1	0	0
Apricots.....	1	0	0	Oranges.....	1	0	0
Chestnuts.....	1	0	0	Peaches.....	1	0	0
Carrots.....	1	0	0	Pears.....	1	0	0
Black.....	1	0	0	desert.....	1	0	0
Figs.....	1	0	0	Pine Apples.....	1	0	0
Filbert.....	1	0	0	Pears.....	1	0	0
Cobs.....	1	0	0	Quinces.....	1	0	0
Gooseberries.....	1	0	0	Raspberries.....	1	0	0
Grapes, Italian.....	1	0	0	Strawberries.....	1	0	0
Lemons.....	1	0	0	Walnuts.....	1	0	0
Melons.....	1	0	0	ditto.....	1	0	0

VEGETABLES.

	s.	d.	d.		s.	d.	d.
Artichokes.....	1	0	0	Mushrooms.....	1	0	0
Asparagus.....	1	0	0	Mustard & Cross.....	1	0	0
Beans, Kidney.....	1	0	0	Onions.....	1	0	0
Beet, Red.....	1	0	0	pickling.....	1	0	0
Broccoli.....	1	0	0	Parley.....	1	0	0
Brussels Sprouts.....	1	0	0	Parsnips.....	1	0	0
Cabbage.....	1	0	0	Peas.....	1	0	0
Carrots.....	1	0	0	Peas, long.....	1	0	0
Cauliflower.....	1	0	0	Kidney.....	1	0	0
Celery.....	1	0	0	New.....	1	0	0
Colewort.....	1	0	0	Ranunculus.....	1	0	0
Cucumbers.....	1	0	0	Ranunculus.....	1	0	0
Endive.....	1	0	0	Spinach.....	1	0	0
Fennel.....	1	0	0	Spinach.....	1	0	0
Garlic.....	1	0	0	Spinach.....	1	0	0
Herbs.....	1	0	0	Spinach.....	1	0	0
Horseradish.....	1	0	0	Spinach.....	1	0	0
Lettuce.....	1	0	0	Turnips.....	1	0	0
Leeks.....	1	0	0	Vegetable Marrows.....	1	0	0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 15—21, 1877.	Average Temperature near London.		Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.			
15	TH	Royal Society at 8.30 P.M.	51.6	33.9	42.3	6 16	6 3	6 16	6 49	0	9 1	74			
16	F	Royal Institution at 8 P.M.	51.4	34.8	43.0	6 15	6 4	6 26	6 0	1	8 24	75			
17	S		49.9	32.6	41.2	6 11	6 6	6 37	5 17	2	8 26	76			
18	SUN	4 SUNDAY IN LENT.	50.3	33.5	41.8	6 9	6 8	6 51	10 38	3	8 9	77			
19	M	Royal Institution at 8 P.M.	51.8	33.2	42.2	6 6	6 6	6 9	7 10	morning	4	7 51	78		
20	TU		51.4	33.8	42.6	6 4	6 11	7 26	0 0	5	7 33	79			
21	W	Royal Horticultural Society—Fruit, and Floral Committee at 11 A.M. Royal Botanic Spring Show.	50.7	32.4	41.5	6 3	6 15	8 15	1 20	6	7 15	80			

From observations taken near London during forty-three years, the average day temperature of the week is 50.1°; and its night temperature 33.8°.

AURICULAS.



IN the florist's Alpine Auricula the two great properties in colouring are—first, the shaded petal; secondly, the golden centre. This is the old-established rule, and it holds good still, and is not to be lightly set aside. Flowers possessing both these properties in perfection must, as regards colour-points, rank as first-class Alpines. Those which possess the first, but are weak in the second, are comparatively second-class varieties. They are represented by a number of shaded flowers with centres pale in colour, like so many custards more or less short of egg, and sometimes of the whitest whity yellow.

A third division has sprung up, possessing indeed the golden centre, but completely wanting in the leading point of shading. They have been called "Self Alpines," which although to florists a contradictory term, yet expresses them exactly. They combine the solid body colour of the self proper with the golden centre of the proper Alpine, and so do not really belong to either, but are a mixture of the two. If they are shown in either class they should be on an equality with the flowers of the class, or their position becomes a foregone and depressing conclusion; and if they are exhibited on an equality with either selfs or Alpines (being as much one as the other), then that established class, hitherto distinctly defined and thoroughly understood, has to be altered, diluted, loosened, and pulled down from its high standard to accommodate a perplexing and most prolific laxity. This should not be the spirit of the times.

The shaded flower is undoubtedly the truer "Alpine;" and shading combined with the golden centre is the strongest form of the flower. Where it is judged by competent judges and by recognised rules all its weaker types must cause some anxiety. At the least, the shaded petal is a point, an addition; it must go for something; I have stated its worth. It seems that flowers without it should be relegated to a separate class whose position we must leave Alpine growers to determine. These yellow-centred selfs need not be lost sight of; but the question is whether it is right that they should be made to confuse existing well-known class distinctions in florist sections of the Auricula. My friend Mr. Douglas also asks us what right we have to make such a distinction; and I might ask, What right have our brethren in the south to confound it?

If an Alpine may or may not be shaded, or a self may or may not have dense white paste, and any new combination between the two may rank with either, the worth and virtue of the best flowers are unprotected. "Self Alpines" are exceedingly pretty, but then there is not a member in the whole family they belong to otherwise than beautiful. This being so, we must, for distinction and honour, mark out certain combinations of beauty more or less difficult to obtain, in order to have rank and contrast, in order to have pull and resistance enough to give us storage way. With no right to make distinctions

and no obligation to abide by them, all florist law and order are at an end, showing and judging helplessly confused, and the encouragements to produce seedlings of rare merit gone.

Mr. Douglas as a true florist will, I am certain, feel this. I am sure he understands that every stern point demanded in a classic flower adds to the grace and beauty of that flower, and Nature works with us and for us to bestow each gift. Who obtained the first approach to an edged Auricula is probably a fact never to be recovered from the oblivion of prehistoric floriculture; but the history repeats itself in every batch of first-rate seedlings where some are selfs with just a tip or fringe of green or white round the petal edges.

And why do we discard the pin eye but for this, that the flower is infinitely fuller of sweet expression with a tube well-furnished with golden anthers than with a hollow throat out of which the naked pistil protrudes almost like a serpent's tongue? In the one case there is the light of a bright eye full of life, in the other the cold stony stare of a sculptured one. I think we have the right to draw and maintain these distinctions, small and unintelligible as they may seem to the uninitiated.

I am sorry to see now and then those who are certainly not florists themselves, nor presumably conversant with florist flowers, undertake in various floral papers to find fault with the florist and to hope he will grow less particular. Why! they owe to those very principles which florists work upon that they have Ribston Pippins for dessert and not Crab Apples.

Mr. Douglas invites an explanation why we should let one class of flowers override another and equally beautiful one. Well, the one may be much more difficult to obtain than the other, through having more points of merit. The greater the time and skill required to gain an object the higher the value of the thing attained. I think this is why green edges in Auriculas override the selfs, and why a feathered Tulip overrides the plain "breeder." They are the higher and more honourable forms, though the preference casts no slur upon the less-gifted flowers. All are full of beauty in their way, but you cannot say there is no difference in degree, no reason why one should rank before another.

Auriculas are to be shown in London with sticks to the trusses. I concede cheerfully that Alpines with their slender stems may require this, but not the Auricula proper. The insuperable objection to sticks is that they hide that important property of the plants, the possession of a firm, elastic, self-supporting stem, and they also conceal a sin against good culture; for a careless grower may draw his plants, and a stick save him from the penalty. How anyone can fancy a support, the crutchiness of which cannot be hid, improves an elegant plant able to carry gracefully its own head erect I cannot tell. However, our brethren down south rather admire wooden legs than otherwise, and their courteous recommendation to use them at their show will of course be gracefully complied with. But to see the plants thus is like seeing a friend sitting in exhibition form for his photograph—sticked like

the Anricula with the apparatus behind that grips him by the head, and is no doubt much to blame for those forced attitudes and stiffnesses in which we all "come out" so little like our own natural easy upright selves.

As to the improved border *Polyanthus* competing with our refined old sorts as florist flowers I do not think they can do it yet. They have not yet attained, as far as I am aware, the purity and depth of colour, the breadth and smoothness and uniform light yellow of the eye, or the perfect gold-wire lacing round and down the petals that mark the florist flower; they are rough imitations, I have seen them nothing nearer. The old florist *Polyanthus* may yet be grown gay with many heads of bloom—witness *Cheshire Favourite* and *Lord Lincoln* in black grounds, and *Kingfisher* and *George IV.* in red. But our *Polyanthus* wants seeding-up. Most of the old sorts are extinct; but seedlings from those I name would possess vigour enough and quality that could not now be surpassed.

Like Mr. Douglas, I write all this in no captious spirit; I simply offer a reply as candid as the questions he has asked in brotherly friendship, and he knows me well enough to believe that I would not wittingly use one acid word.—F. D. HOENER, *Kirkby Malzeard, Ripon.*

KITCHEN GARDENING.

MR. MACINDOE gives excellent advice in the remarks published on page 161. If any young gardener, or old one either, has not read the article to which I refer they have omitted what will benefit them to remember and practise. A thorough knowledge of how to produce a continual supply of first-rate vegetables is a really valuable attainment, and no gardener who does not possess this will ever retain the esteem of his employer. Where there is a garden at all there is sure to be a kitchen garden, consequently every young gardener has an opportunity of learning in this department, so that I do not think it is for want of opportunity that anyone need be ignorant of kitchen gardening; but I fear that many consider it drudgery, and this is a great mistake, as anyone may feel as much interested in the kitchen garden and its work as in growing *Orobolids* or any fine specimen plants. Many young gardeners are compelled to pass a certain amount of their time in the kitchen garden when they are serving their time, but as soon as this is over their leading idea is to get into the house, from whence it is considered to lower their dignity to return until they may be appointed to some charge of their own, when their deficiency of kitchen gardening is very often the cause of their failure. I can say from experience that a good knowledge of kitchen-garden work will cover a multitude of other deficiencies, but I pity the man who depends on his knowledge of specimens and housework to carry him through the requirements of a general place.

As the present is the most instructive period in all the year for kitchen-garden work I would strongly advise all young gardeners to pay great attention to all that is done in this department. Do not think that by looking "through the glass" that you know all about how the seeds are put in, but, if necessary, express your willingness to go out and make yourself useful in these busy times, and never rest satisfied until you know how long it takes each vegetable to come to perfection, the tillage, manure, &c., which suits each best, and all the different ways of getting some things in early and others late.—A KITCHEN GARDENER.

NOTES FROM MY GARDEN IN 1876.—No. 3. GREENHOUSE.

THERE cannot be much to say of a structure some 20 feet by 12 with a small annex, and yet there are a few noteworthy things to record for the benefit of "little men" like myself, who are obliged to make shift, and who wish at the same time to have something at all reasons to look at. This seems to me preferable to going in for a house full of bloom at one time and comparatively empty at another. You may have it gay with *Azaleas*, or *Cyclamens*, or *Pelargoniums*, or *Fuchsias*, but if you give your house up exclusively to one or other of these flowers it is very much like the bedding-out in the open garden—you sacrifice continuous enjoyment for the sake of one grand flush of bloom; and hence my effort has always been to secure a supply of flowers on which the eye may dwell with pleasure, and especially during the earlier months of the year.

Camellias were very good with me; the buds did not drop

and the flowers were fine. I attribute this to three causes—the obtaining of Mr. Epps selected peat, which is really a great boon to small gardeners; the keeping of the plants in the house all the year, never standing them out of doors; and the use of Standen's gardener's manure two or three times when the buds are swelling. A shift out of doors in the shade is congenial to the *Camellia*, but the danger is that watering is either overdone or neglected, and then when one is looking for the buds to open they become brown and drop off; whereas when in the house under the shade of the Vines they are not liable to the vicissitudes of weather and can be more carefully looked after. Amongst the few that I am enabled to grow I was particularly struck with *Madame Ambroise Verschaffel*, most beautifully flaked with rose. There were some blooms of that which might well have passed for a rose flake *Caration*, and without the need of any dressing.

I have already drawn attention to the beautiful class of bulbous roots—the *Ixias*, *Sparaxis*, and *Bahianas*. The former of these especially it is almost impossible to praise too highly. They are so elegant in form and habit, and so beautiful in their colouring, that I have been induced this year to grow them still more; and they are so thoroughly appreciated, too, for cutting for decoration, that they ought to be more grown than they are.

Another class of bulbous plants remarkable for their quaintness and beauty I had a few of last year, and owing to the kindness of Mr. Bull a larger number this year. I allude to the *Californian bulb*, *Cycelobothra* and *Calochortus*. They are utterly unlike anything we have had as yet; are said to be perfectly hardy, and, if not that, they are certainly most easily grown. *Cycelobothra cernula* is very lovely, and *Calochortus venustus* is a gem; but indeed all are very beautiful.

I had as usual sent me from Slough the new varieties of *Pelargoniums*, a class of plants the neglect of which one must ever more and more deplore, for they are very lovely, and for two months at least give a continuous and brilliant bloom. With one exception all those sent out last year came from the garden at Clewer, whence Mr. Foster has for so many years sent forth so many fine varieties. Some of my earliest floral associations are connected with them, and one must only hope that some day there may be a revival of the taste. There is improvement from year to year, although small, yet on looking back and comparing those of the past season with those, say, of 1873, the improvement is seen.

Ambassador (Foster).—A flower in which the spot does not cover the whole of the upper petals, but is of medium size, the petals being deep pink, while the lower petals are a lighter shade of the same colour.

Archduke (Foster).—In this the upper petals are entirely covered with deep maroon with the exception of a narrow wide edge of deep orange; lower petals are pink, slightly veined; centre pure white.

Aurora (Foster).—Brilliant fiery scarlet; a remarkably high-coloured flower with a medium spot. The plant at once strikes the eye even amongst others of a similar shade.

Challenger (Foster).—Scarlet petals with maroon spot. An attractive flower.

Diplomatist (Foster).—Top petals deep maroon; lower petals purple with a clear white eye. A very fine flower, and free in growth.

Enchantress (Foster).—Crimson pink, with dark maroon upper petals; clear white centre.

Gipsy (Foster).—A very dark flower, meriting its name. Very dark top petals with a narrow crimson margin; centre white; lower petals very richly painted.

Judith (Foster).—Upper petals dark maroon; rosy pink lower petals, white centre. Flower full and large.

Mrs. A. Matthews (Matthews).—A beautiful soft rosy-coloured flower; centre white; very smooth and even.

Potentate (Foster).—Maroon top, deep rose lower petals. A very lovely flower.

In addition to these Mr. Bréchant, who is an enthusiastic grower of this class of plants, sent me three or four small plants of seedlings of his own raising, amongst them a pure white flower which I think will be highly prized as a stage flower, and which will I believe appear in Mr. Turner's list of new varieties of this spring.

I have found some difficulty in filling up my house after the *Pelargoniums* were out of bloom, but last year managed by the help of *Lilies*, *Fuchsias*, and the bulbous-rooted *Begonias* to keep it tolerably gay. The latter are very useful and handsome, and such kinds as *Vesuvius*, *Model*, and others of a like

strain are a great boon. They are easily grown and very gay. Thus from January until the end of September I have been enabled to make my little house presentable, and have had much enjoyment for myself and pleasure for others out of it.—D., Deal.

RUST ON GRAPES.

I HAVE often read of and heard discussions relative to the cause of rust on Grapes. I think it has come to be generally believed that sulphur applied to hot-water pipes when the berries are in the embryo state will produce rust; others again say that damp hands while thinning, touching the berries with hair of the head, cold winds, &c., are the causes. I am not going to condemn all that has been said regarding the rust, but will express my opinion as to a principal source of its origin.

It is pretty well understood that thrips is very fond of the juices of the Vine, and this pleases their taste best when the wood, leaves, and fruit are in the young state. At this stage thrips are exceedingly busy (of course I allude to those only who have a stock of that troublesome little pest), preying on the young berries as well as the wood and leaves. I am decidedly of opinion that this is one of the principal causes of rust. Although to the naked eye the injury is invisible for a time, nevertheless damage is done, and it will make its appearance more and more while the berries swell until they have nearly attained their full size. No doubt by painting hot-water pipes or flues with sulphur the fumes will hasten the incrustation on the Grapes in the same manner as it will kill warts on the back of the leaves; but notwithstanding, had the damage not been there previous to the application of sulphur I am convinced it would do no harm unless applied very hot. If sulphur was the cause of rust, why are some of the berries of bunches quite clean and others bad with rust? One would imagine that all of the berries are subject to being affected by the fumes.

The most effectual cure that I have found for thrips is smoking with tobacco or tobacco paper. As our vineries are never clear of plants, and adhering to the old adage that "prevention is better than cure," we fumigate before commencing forcing, and periodically throughout the season. This is the most effectual and economical plan in keeping the Vines clean. Those whose houses are very much infested with thrips must fumigate three nights in succession.—JAMES DICKSON.

CULTURE OF THE DAHLIA.

AFTER an interval of several years I am about to resume the culture of Dahlias—not for the production of flowers for exhibition, but for ordinary garden decoration; and it occurs to me that a brief explanation of how I intend doing this may prove useful to the many who are on the outlook for flowers, which, in addition to being really attractive and ornamental, possess the valuable property of being amenable to easy and inexpensive methods of culture.

I am starting with a selection of some forty varieties, comprising a few of each class—fancy, bedding, bouquet, and exhibition, my object being to secure diversity in the plants as well as in the flowers which they bear. The whole of them are "pot roots," or, in other words, the dried roots of plants raised from cuttings taken late last season (in August), with the special view of keeping them in pots to form an easily portable stock for propagation this spring. There are various ways of managing the propagation; that which I prefer is early in the present month to mix together some leaves and fresh stable manure for a hotbed, not a very hot one; 3 feet high is quite sufficient to afford the gentle but steady bottom heat that is necessary to induce the quiescent tubers to put forth roots and the crowns to send up shoots. Upon the hotbed is placed a frame consisting of four rough deal boards nailed together. It is nearly filled with rich gritty soil, into which the roots are turned out of the pots, a hurdle thatched with straw being the only covering, and even this is removed upon every fine day. As the young shoots appear they are taken off close to the crown, potted, and put in a propagating frame or pot along with other cuttings. Roots form quickly, and the young plants are soon ready for a shift into 4-inch pots, when they are taken to a cold frame, receiving all due attention in watering, abundant ventilation, and protection from frost and cold cutting winds.

My reason for giving preference to this method of propagation is that it is very simple and very efficient, the plants

resulting from it being far preferable to those raised by any other method, for the gentle yet steady heat that is constantly rising to the roots induces a slow yet certain growth, while the constant play of fresh air about the crowns renders that growth very sturdy and robust, presenting a striking and pleasing contrast to the delicate straw-like appearance of such plants as we sometimes see in pits and forcing houses.

The Dahlia requires generous treatment like most other plants of a free succulent growth, and with my poor soil I shall be compelled to use plenty of manure or fail outright. The very best soil for the Dahlia is a deep, rich, sandy loam. What an unobvious sound the phrase has belonging to it, and how often do we have it in our mouths or at the tip of our pens when we want to describe soil that is very fertile! Well, that is the soil which I have not, but which I shall try to imitate as well as I can. Plenty of manure and gritty matter mixed with my poor soil will do this sufficiently well, just as a few cartloads or even barrowfuls of road scrapings would answer the same purpose for the puzzled dweller in a suburban villa, to whom—if he were to ask me to describe the best soil for his Dahlias; aye, and for most other flowers—I could not do better than advise him to make a heap, or rather a deep bed, of such road scrapings as are gathered on every highway, and to plant them therein.

Planting should not be done until the end of May or beginning of June; then select and mark the position of each plant with a stake driven firmly into the soil and left as a permanent support throughout the entire season of growth. By this method the long fleshy tuberos roots escape the damage so often inflicted when stakes are driven in to support them after they are planted. Water will be given abundantly and frequently in dry weather, preference being given to sewage water or liquid manure so often as it can be spared. In autumn the plants will be cut down when decay sets in, the roots lifted, and kept in a dry shed or cellar till spring comes round again.—EDWARD LUCKHURST.

SPROUTING POTATOES BEFORE PLANTING.

LIKE every matter relating to gardening this subject has been largely written about in the Journal. I observe that some correspondents recommend starting Potatoes far into growth in a heated house before planting. I daresay many of your readers who grow both early and late Potatoes have no heated house to start them in, and if they credit all this starting process they must think their chances of successful Potatogrowing a hopeless one; but I can tell them and show some proof that they need have no fear on that score. I never put one of my tubers into artificial heat to sprout. I planted a large pit with two or three sorts of kidneys about the middle of January; the haulms are now a foot high, and a healthier lot of Potatoes I have not seen for a long time either under glass or in the open air. If sprouting is an advantage it should be most shown in the short dull days, and one would suppose that unless the tubers were far advanced in growth the haulm would be long in appearing, even with a little heat, at that time, but such is not the case.

I will yield to the sprouting advocates so far, as I do not plant the tubers with no indication of growth about them. Most of those I have planted have been sprouted about half an inch, and this was done in a way that everybody may practise. All tubers intended for planting are spread thinly out in a half-lighted cool place, such as is afforded in any ordinary shed. The shoots formed here are short and thick, and the points have a pink appearance. This is a healthy sign, and is never found in those sprouted in strong heat. Their pale colour is a sure indication of a severe check when they come to be planted in the cold soil; and while they are standing still between life and death, those slightly but strongly sprouted in a cool place will make substantial progress.—PRACTICALIST.

PRIMULAS.

I HAVE read with very great pleasure, and I hope profit, Mr. Abbey's very interesting notes on Primulas, and most certainly agree with him that "a greenhouse at this season of the year without Primulas is indeed poor." There is one point in this article respecting double Primulas that is so much at variance with my practice that I hope your correspondent will excuse me noticing it. Mr. Abbey is reported to say, "I would particularly note the great value of double Primulas which are now raised from seed.. I have some so

large and double as to be taken for named varieties, only the great vigour of the plants and their floriferous character soon dispel any such suspicion."

Permit me to say I now have Primulas worthily occupying 16-sized pots. So vigorous and healthy are these plants that the rims of the pots are completely hidden; and as to their floriferous character, I have this day counted 110 flowers fully expanded on one plant, and twice that quantity of buds. Mr. Abbey mentioned Prince Arthur which I have from seed, but it is only semi-double. The Primulas in question were struck last April, and are quite as double as Daisies. I shall be happy to send Mr. Abbey a few flowers, but as I intend exhibiting cut flowers at Kensington on Wednesday the 21st inst., they cannot be spared until after the exhibition.—R. GILBERT, *Burghley*.

PRESERVING SEEDS FROM BIRDS.

SEED time brings more than one anxiety to the gardener. Bad weather makes it impossible to sow many crops at their proper time, and many other obstacles make spring progress anything but plain sailing; but of all pests and misfortunes there is none more aggravating than to have the seeds carefully placed in the ground and then to have them scatched up and voraciously eaten by the birds. Many schemes have been put in operation to avoid this. Nets form a safeguard, but everyone has not the means to possess a quantity of these; besides, resting them on the soil rots them, and there is much work entailed in putting them on and off the seed beds. I have been sowing a lot of Cabbage, Cauliflower, Lettuce, and other seeds that birds are fond of; and although they abound in flocks in the woods all round the garden, there is not one of them ever goes near a seed bed. I have spent no time in contriving "bogies," but all I have done is to scatter enough fine white lime over the surface of the beds to make them appear white. Why it is I cannot say, but not a bird will alight on this. Apart from the birds, snails have a strong aversion to the lime, so that it is as good as "killing two birds with one stone."—A KITCHEN GARDENER.

[We have observed the same results. The white surface is objectionable to birds, and sometimes also to owners of gardens, or we think the practice of dusting the surface of the soil and the branches of fruit trees with lime would be more generally adopted.—EDS.]

COCKSCOMB CULTURE.

At the usual fortnightly meeting of the Darlington Gardeners' Institute, the following paper on the *Celosia* or Cockscomb was read by Mr. Hilliard of Greencroft East:—

"The *Celosia cristata* is an old and a very favourite annual. The seed may be sown in a warm house or hothed at any time from the 1st of January to the end of March, or early in April, according to the time the plants are required. As soon as they are large enough to handle they may be pricked-out in pans or boxes, using well-enriched soil—namely, loam, leaf soil, and manure in equal parts, with sufficient sand to make the whole porous. Place them close to the glass in a brick hothed, and shade from bright sunshine. When they are well established and large enough pot them singly in 5-inch pots, using the same compost as before. Never allow them to become dry, or all your labour will be lost, for they will never forget the check they receive if watering be neglected, and all your after care will not compensate for that omission. When the 5-inch pots are well filled with roots give them the final shift, and plunge again in bottom heat, very carefully shading them for a few days; for if exposed to hot sunshine they will lose their lower foliage, turn brown, and be spoiled. When they have reached maturity they may be gradually hardened off and placed in any light airy structure, where if watched carefully and syringed occasionally to keep off the red spider (which is very apt to attack them), they may be kept good for two or three months. Before I come to the pyramidal varieties I would advise those who wish to grow *Celosias* for late blooming to be very careful about the drainage, as in the dark dull autumn days they are apt to decay at the neck if not well drained and carefully watered.

"The pyramidal section, commonly known as '*Celosia pyramidalis*,' requires somewhat similar treatment in their earlier stages, and somewhat similar soil. But if good and neat plants are wanted, sow early and strike cuttings, as by this mode dwarf pyramids closer set than if grown from seed may be obtained. Do not, however, adopt this plan with *Celosia cristata*, for it

will not produce such good combs as if grown from seed, and is too much dwarfed by the process. Very good specimens of the latter, pot and all not exceeding 12 or 14 inches, dwarf enough for any purpose, may be had from seed. To return to the pyramidal varieties, it will generally be impracticable to grow them to perfection in bottom heat, but this may be attained by having them in any warm house, if a genial moist atmosphere be maintained and they are not allowed to receive a sudden check. If, however, you have the former at command by all means avail yourself of it, and they will amply repay you for it and any extra care you bestow on them, as in the dull autumn and winter days their bright colours are very cheering and are a splendid contrast to foliage plants. They must be moved as required, and strong plants may be put into 10-inch pots, in which fine plants large enough for any purpose may be grown. Select drooping or weeping varieties for your best plants. I do not mean weeping to the same comparative extent as a drooping Ash or Beech, but those with the plumes slightly drooping. A few erect kinds should be grown for the sake of their plumes, as they make a desirable variety when intermixed with the pendulous varieties. The latter, are, however, best for all decorative purposes, as they usually grow much closer than the erect growers, which are apt to become straggling. When the plants show signs of bloom they may be watered with weak manure water; this will strengthen them, and bring them to perfection. In conclusion, I would advise all who require plants for conservatory decoration to grow *Celosia pyramidalis*; it may be safely classed among the brightest of winter decorative plants, and is of easy cultivation."—(*Darlington and Stockton Times*.)

MESSRS. ROLLISSON'S NURSERY, TOOTING.

Amongst the metropolitan nurseries worthy of notice for its long-established character and the extent and completeness of its collections of plants must be placed the head-quarters of William Rollisson & Sons. Being situated in the suburbs of London, just as they were beyond the smoke line, the nursery has the advantage of pure air, which is essential to the health of the great variety of hard-wooded plants which are cultivated, and it is also convenient of access from the stations of Tooting on the South-Western Railway, and Balham on the Brighton line.

The nursery, which may be described as a wholesale and retail plant emporium, contains a considerable number of glass structures—thirty large houses and numerous long ranges of pits and frames. These structures are occupied with stocks of plants of a very varied character—from *Orchids*, *Palms*, *Ferns*, and choice stove plants to *Heaths* and other hard-wooded greenhouse plants; also hardy herbaceous, alpine, and aquatic plants, *climbers*, *Roses*, &c., all of which are grown on an extensive scale.

There is nothing of external grandeur connected with the nursery, for its aspect is plain, the several houses having been erected for use rather than ornament; yet the more modern structures are not devoid of attractive features. The most imposing building is doubtless the show house or conservatory—a somewhat narrow and lofty span-roofed erection, which cannot be less than 350 feet in length. A bed is formed along the centre of the house with a pathway round it, a stage being arranged on one side next the glass for flowering plants, the other side being an opaque wall covered principally with *Camellias*. The central bed is occupied with large *Palms*, *Tree Ferns*, *Arancarias*, *Camellias*, &c., and is bordered with *Lycopodium denticulatum*, the side stage being gay with *Epicurians*, *Azaleas* (*A. mollis* being particularly attractive), *Lilies*, *bulbs*, &c., margined with *Isoplepis gracilis*, and the effect produced is very pleasing. The *Tree Ferns* in this house are especially noteworthy, a large importation having recently arrived, the trunks being straight and clean, and every one starting into growth freely. They vary in height from 2 to 8 feet, and comprise all the most popular sorts—with the addition of a few which are comparatively rare—notably *Dicksonia Diplanthe*, a New Caledonian form of *D. Youngii*, with the *ra* densely covered with cinnamon-coloured hairs.

The next house is totally different in character, being a wide flat-roofed lean-to, probably 300 feet long, and entirely filled with *Heaths*. This class of plants constitute a speciality of the nursery, the stock numbering 160,000 plants in almost all sizes and extremely healthy. Many new varieties of *Ericas*, probably nearly a hundred, have been raised in this nursery—in fact, almost all the best representatives of this genus are

garden hybrids, many of which are frequently regarded as species. The new *Ericas* sent out last year by this firm are *Effusa*, *Opulenta*, *Ornata*, *Shannoni glabra*, and *Tricolor profusa*, all raised by cross-fertilisation. Other new varieties are now being produced. Such popular decorative kinds as *hyemalis*, *Willmoreana*, &c., are raised by the thousand. The stock of the former at the commencement of the season numbered sixty thousand. Many plants are grown in frames, and others are placed under a skeleton framework and are simply covered with mats in severe weather. Potting is now being proceeded with, it being considered desirable to complete the shifting of *Ericas* by the 1st of April.

Ornamental-foliaged stove plants are extensively cultivated, several large houses being devoted to them. Nearly all the new *Crotone*s, *Dracenas* (including *Willia's* hybrids), *Aralias*, &c., are being increased. *Aralia Veitchii gracillima* appears to retain its distinctly slender character, and a new green variety of great elegance is highly promising; it is not yet in commerce. Noticeable in one of the stoves is a fine plant of *Spathiphyllum pictum* in remarkably fine colour. This bold plant was introduced by Mr. Bull, and appears to improve as it grows older—a silent example for growers to follow. A fine old flowering stove plant, *Tabernaemontana coronaria flore-pleno*, is being increased largely. So free is it that plants only a few inches high are surmounted with a corona of flower buds. Gesneraceous plants are also grown extensively, some of the *Yuccas* being now attractive with their richly-spotted flowers.

Three or four houses are filled with *Palms*, many of the plants consisting of popular kinds for decorative purposes, while kinds more new and rare are also represented. *Cocos Weddelliana* is flowering, and the newest forms of *Kentias*, *Geonomas*, *Astrocaryums*, &c., are being established. *Palms* are becoming increasing popular, and deservedly so, for no plants can so long retain their fresh ornamental character in the dry air of rooms and corridors, and can better resist injury from changes of temperature.

Ferns are cultivated on an extensive scale, one house devoted to them having a novel appearance from the rafters being heavily clothed with *Ficus repens*, which is also at intervals trained across the lights, forming as it were a series of panels. It is thus grown for the purpose of affording shade for the *Ferns*. In this house is a fine stock of *Lomaria gibba crispata*, *Adiantum gracillimum* raised from spores, the plants coming quite true to character; but it is singular that in their early stages the pinnae are large, resembling *A. onestum*, the fronds produced subsequently only coming of the peculiar slender character which suggested the popular name of "Ganze Fern," which has been appropriately given to this *Maidenhair*. The newer *Adiantums*, *A. Semanni* and *A. speciosum*, are also represented, besides others "too numerous to mention."

A series of large light span-roofed houses are devoted to such plants as *Hedera*s, *Dracophyllum*s, *Pimeles*, *Correas*, *Tetrathecas*, *Aphelaxes*, *Gnidias*, *Azaleas*, &c. *Gnidia pinifolia* is especially worthy of notice from its free-growing character, slender foliage, and small yet conspicuous white flowers; it is a plant worth growing in every greenhouse. *Grevillea Priesii*, which was certificated last year, is seen in goodly numbers; it is both novel and attractive, and likely to become popular. *Azaleas* (umbrella-shaped plants) are in superior condition. Many of them had been planted out in the summer continental fashion, and potted in the autumn, and the treatment has evidently suited them, for no plants could be in better condition. *Camellias* are also numerous and good, home-raised and home-grown plants.

Orchids have a large share of attention bestowed on them, two large houses being devoted to their culture. All the popular kinds are represented, the plants being grown as cool as possible consistent with safety, and they are clean and in good condition. Amongst those now flowering are *Dendrobium Wardianum*, *pardalinum*, *Bosalli*, noble, *litiflorum*, *Faulkneri*, *crassinode*, and *japonicum*; *Oncidium sarcoodes* and *Cavendishii*; *Odontoglossum Cervantesii*, *C. decora*, and *Alexandra*; *Cattleya citrina* and *Wareowiczii deltoata*; *Vanda tricolor*, *Miltonia cuneata*, *Sophronites grandiflora*, *Saocolea calceolaria*, *Phalenopsis grandiflora* and *Schilleriana*, *Dendrochilum glaucum*, and several *Cypripedium*s.

As may be expected at the period of the year, the propagating houses are being fully taxed: large stocks of *Tea Roses* are being worked, also *Clematites* and *Vines*, many of the latter being already established in 6-inch pots.

Hardy plants of all kinds receive special attention here;

fifty thousand are kept in small pots plunged in ashes, and there are also large plantations of *Phloxes*, *Pyrethrums*, *Ponies*, &c. The demand for these plants is great and is yearly increasing.

The nursery is now under the management of Mr. Gower, whose name is a sufficient guarantee that its reputation will increase rather than diminish. To him, also to the proprietors, I am indebted for much courtesy during my hasty "look round."—VISITOR.

NOTES AND GLEANINGS.

At a general meeting of the Royal Horticultural Society, held on the 7th inst. of the present candidates were elected FELLOWS OF THE SOCIETY:—Mrs. Chisholm Batten, J. Brunles, C.E., Mrs. Chapin, W. Jas. Epps, C. E. Hamilton, Mrs. Mounsey Huysam, Major Horrocks, Mrs. Lloyd, Mrs. Maitland, W. H. Michael, Henry Micholls, Robert Mixer, Sir W. B. Riddell, Bart., Mrs. Russell Roberts, G. Morley Saunders, Frederic Sewell, and Andrew Stephen, M.D. The following were also elected guinea members:—G. Smith, Mrs. E. Maberly, Miss F. C. Catley, Miss Edmonds, G. W. Greenhill, R. Elliott, Lady MacArthur, Hon. Isabel Calthorpe, S. Sidley, and Lady Dorothy Nevill.

THE Council of the Royal Horticultural Society propose instituting at the Chiswick Gardens this season, under the direction of the Fruit and Floral Committees, comparative trials of the following subjects. Of vegetables: Tomatoes, Cabbages, Savoys, Turnips, new Peas, and new Potatoes. Of flowers: *Epacris*, *Gloxinias*, *Begonias*, *Cannas*, new *Zonal Pelargoniums*, *Stocks*, *Asters*, and new annuals. Fellows of the Society and those desiring to contribute subjects for this purpose will please communicate with Dr. Hogg, Secretary to the Society; or Mr. Barron, Garden Superintendent at the Royal Horticultural Gardens, Chiswick.

WHAT is said to be an ANTIDOTE TO THE POTATO DISEASE is SALU—a compound of sulphur and potassium discovered by Mr. Worthington G. Smith, the eminent fungologist, who has so perfectly investigated the economy of the *Peronospora infestans*, which is the mould that gives rise to the disease. We observe that Messrs. J. C. Wheeler & Son of Gloucester are the sole agents for Great Britain; and it would be well worth the trouble for all who are interested in this important question if they were to give the salu a trial this season. We should be quite prepared to publish any reports on the experiment as may be sent us.

THE PELARGONIUM SOCIETY holds its exhibition at the Royal Horticultural Society's garden, South Kensington, on the 20th of June. Members only can compete. There are twenty-four classes, in most of which three prizes are offered, varying in amount from £5 to £1.

It will be remembered that a first-class certificate was awarded last year by the Royal Horticultural Society to Mr. Wm. Bull for a DOUBLE EPACRIS, and the honour was well merited. Mr. Bull has since been fortunate in obtaining another and distinct variety of this new type of *Epacris*, and the plant now flowering at Chelsea is worthy of inspection. The flowers are pure white and perfectly double, the "pips" being about three-eighths of an inch in diameter, and having tubes much shorter than the ordinary single flowers. The flowering shoots are closely set with the miniature rosette-like flowers, and present a charming appearance. There can be little doubt that the intrinsic merits of these new double *Epacris* will render them as popular in their way as double *Pelargoniums*. Like the *Pelargonium*, the pips of the double *Epacris* do not drop off but shrivel on the plants—an admitted advantage when the flowers are employed in a cut state. The new *Epacris* is named *Oncemeflora nivalis*, and it is sure to be extensively cultivated. Another noticeable plant now flowering in this nursery is *Imantophyllum miniatum princeps*, the flowers being three times the size of those of the species, and are also better formed and more richly coloured—a great acquisition. Several *Orchids* are also flowering, and the *Cycads* and *Tree Ferns* always command attention.

We learn that the subject of BLIGHT OR DISEASE affecting the plants in the TEA PLANTATIONS OF INDIA has been brought prominently under the notice of the Agricultural Society of India, a letter having been addressed to the Society to the effect that the attacks of "blight and red spider" having become of such a serious nature on many *Tea* gardens both at Assam and Cachar, and especially in the latter

province, it is necessary that all possible information, with a view of mitigating the evil, should be obtained and made widely known." At a subsequent meeting of the Society the line of action proposed, subject to the assistance of those interested in the matter, was to engage the services of an entomologist from England for the period of two years, so that he might have time and opportunity to observe and carefully study the character of the several kinds of blight in their various localities, such observations to be published under the auspices of the Society.

— THERE was a full attendance at the monthly meeting of the Horticultural Club on Wednesday the 7th inst., and the following gentlemen were elected members:—Charles Lee, Crosby House, Hounslow; H. J. Elwes, Preston, Cirencester; John Smith, Royal Gardens, Kew; H. G. Quilter, Birmingham; Benjamin R. Cant, Colchester; James F. West, Lynn-mouth Lodge, Reigate; and William Lee, Brandenburg Road, Gannarsbury.

— WE briefly announced in our report last week that the Floral Committee of the Royal Horticultural Society awarded a first-class certificate to Messrs. James Veitch & Sons for *EURYLELES AUSTRALASICA*. This plant deserves more than a casual notice from its distinctness and value for decorative purposes. It has been compared to an *Eucharis* and a *Criminum*, but it is more intelligibly represented as a *Paneratium*—indeed, it was once known as *Paneratium australasicum*. It is easy to be described. It has a bulb similar to a *Narcissus*, which throws up one or more heads of flowers 6 to 8 inches high and as large as those of an *Agapanthus*, but of a pearly white with yellow anthers. The leaves are produced occasionally with the flowers, but generally afterwards; they are 5 or 6 inches across and are of the same texture but lighter in colour than those of the *Eucharis*. *Euryleles australasica* was introduced from New Holland more than half a century ago, but its full merits have only just been established. It is a plant of easy culture, and appears to flower with great freedom; it lasts also a considerable time in beauty—fully a month under good management. It will be grown by the dozen and hundred when it becomes sufficiently known, and is likely to be as popular as the *Eucharis*.

— MANY striking Orchids are now flowering in Messrs. Veitch's extensive collection at Chelsea. Foremost must be named the grand *Lælia Veitchii*, a cross between *Cattleya labiata* and *Lælia crispata*. L. Pilcherii, from L. Perrinii and L. crispata, is also very attractive. *Lycaste alba maxima* commands attention from its wax-like substance and purity. A fine contrast is afforded by *Bletia amethystina*, purplish pink and very free. *Cattleya amethystoglossa*, with its richly spotted sepals, is very fine, and even finer from its size and its purity is *O. Trianae alba*. *C. citrina* is also just expanding. *Madevalia chimera* is protruding its grotesque flowers, *Stanhopea-like*, from the bottom of the basket in which it is growing, and *M. tovarensis* attracts by its purity. *Phalenopsis* and *Odontoglossums* are numerous, as also are *Dendrobiums*, including *D. Dominii*. Amongst *Oncidiums* the soft yellow of *aggregatum* commands attention, and even more so does *O. varicosum*, which is exceedingly fine, and the plants are in hundreds. Of the new and strikingly spotted *Odontoglossum cirrhoosum* only one plant is now in flower out of a stock of probably ten thousand. The collection of Orchids in this nursery is not more noticeable for its magnitude than for the remarkable clearness of every plant.

— "A LOVER OF BIRDS" writes to us as follows:—"Last season was marked by a scarcity of Holly berries, and 'haws' were not particularly plentiful. These form the staple of the food of the soft-billed birds in severe weather. Provisionally the winter has been mild and wet, and worms and slugs have been unusually active; upon those the blackbirds and thrushes have feasted, and did not eat the 'haws' until the frost and snow of March, when the worms and slugs had sought shelter in the earth. An entomologist has recently observed that the protracted wet has possibly proved fatal to insect life. May we not also presume that more than the usual quantities of grubs have been devoured by the birds during the extremely mild winter? Birds only eat haws, &c., in winter, and fruit during summer when deprived of the natural food by severe frost or extreme drought; therefore do not wantonly destroy the gardeners' friends—the birds."

— THE unusually mild weather and long-continued wet of the winter season appears, says an experienced gardener, to have had a marked effect upon the production of FORCED MUSH-

ROOMS. In no season have they been more abundant, the beds more enduring, or the quality better. This points to the necessity of providing regular humidity and an equable temperature in Mushroom culture, conditions which are better afforded in underground houses than in structures above ground. Artificial heat and frequent waterings, according to the evidence of the closing winter, should be as much as possible avoided in the cultivation of Mushrooms.

— WE recently noticed superior examples of double *Primulas*, also *Montauk Primulas*, as growing at Messrs. E. G. HENDERSON & SON'S PINE APPLE NURSERY. We may now say that this nursery is undergoing various improvements, and is being stocked in a manner worthy of its ownership. Large collections of ornamental-foliaged plants, stove and greenhouse flowering plants, Orchids, Lilies, Amaryllises, &c., besides several "old and rare" plants not commonly met with, are now to be seen at the "Pine Apple." Palms and Ferns are very numerous, the stock of *Adiantum farleyense* numbering 2500, while of the useful *Palm Corypha australis* there are four thousand plants. Orchids are also grown in large numbers, there being one thousand plants of *Odontoglossum Alexandræ*, and eight hundred of *Dendrobium thyrsiflorum*. Many Orchids are flowering, and we never saw finer varieties and finer growths of *Dendrobium Wardianum*, some of the flowers of this superlatively beautiful *Dendrobium* measuring 4 inches and more in diameter. *Hippastrum Hendersonii*, a beautiful variety, is becoming increasingly popular. It is grown by thousands in unheated pits during the summer, and flowers most freely during the winter months. A large number of seedling *Draecenas* are showing colour; and it is remarkable that while the whole of the seed was taken from one spray of *D. albicans* crossed with *D. pulcherrima*, both narrow-leaved kinds, the produce is extremely variable, many of the varieties being broad and massive in their foliage, and have little in common with their parentage. All the plants in the nursery are healthy and clean, and reflect credit on the manager, Mr. O'Brien.

— THE beautiful TREE CARNATIONS, GUELDER ROSE and ROSE PERFECT, for which first-class certificates were awarded at the last meeting of the Royal Horticultural Society, were exhibited by Mr. Charles Turner, Slough.

— WE have received the schedule of the INTERNATIONAL EXHIBITION to be held at Carlisle on September the 6th, 7th, and 8th. The schedule is divided into fourteen sections, comprising 228 classes. The prizes offered are very liberal, amounting in the aggregate to upwards of £1200. For collections of sixteen sorts of fruit the first prize is £20, for twelve sorts £15, and for ten sorts £10; £111 being provided for the twelve prizes offered in these collections. Grapes are well provided for, not less than £200 being offered in prizes. For eight varieties, one bunch of each, the amounts are £15, £12, £10, and £8. There are also seventy other prizes offered for Grapes. Liberal prizes are offered for Continental and American collections of fruit. The prizes offered for plants in pots are equally substantial, the chief being £20, £15, and £10 for twenty stove and greenhouse plants, and the same amounts for twelve new plants not yet in commerce. There are prizes also for cut flowers, table decorations, vegetables, and horticultural requisites. Several silver cups are offered by private donors, including three by Mr. V. Bull of Chelsea. The exhibits must be staged before 10 o'clock P.M. on September 5th, and must remain until one o'clock on the Monday following. Professional gardeners will be admitted on the first day of the Show from 9 to 11 A.M. on payment of one shilling each. The Exhibition is under distinguished patronage and a practical committee, and is to be managed by Mr. W. Thomeon of Clowdfords. Only fine weather during the Show days is required to render the great undertaking completely successful.

— UPWARDS of £1300 was realised by the recent sale of the late Mr. WILKINS'S ORCHIDS at Stevens's rooms. The principal prizes obtained were for *Lælia elegans* Turnerii, 36 guineas; *Odontoglossum vexillarium*, 23 to 42 guineas; and *O. Phalenopsis*, 29 guineas. Prices ranging from 10 to 15 guineas were secured for *Lælia arceuthoceras* Dawsonii, *Epidendrum vitellinum majus*, *Odontoglossum Binnii*, *Oncidium ampliatum majus*, and *Dendrobium Wardianum*.

— AT a recent meeting of the METEOROLOGICAL SOCIETY, the President, after referring to the various theories advanced to account for changes of climate, observed that the climate of London has been modified by the consumption of fuel and the vast population. He estimated that the heat developed from

the present annual consumption of 5,000,000 tons of coal on the metropolitan registration area of 118 square miles, and from all other artificial sources, would suffice to raise the temperature of a stratum of air 100 feet in depth resting on that area 2.5 every hour. The effect of the growth of the population of London from 900,000 at the commencement of the century to 3,500,000 at the present time, and of the still greater increase in the comparative consumption of coal, was manifested by the rise in the average temperature of the air at the Royal Observatory, Greenwich. For this reason Greenwich was not a suitable place for a meteorological observatory of the first order.

CLIVE HOUSE SEEDLING GRAPE.

We have been requested to publish the following:—

“To the Secretary of the Fruit Committee of the Royal Horticultural Society.

“Sir,—I beg to acknowledge receipt of extract from the minutes of the Fruit Committee of the Royal Horticultural Society respecting Clive House Seedling, and must express my astonishment that the Committee should have passed such a minute without first asking from me an explanation of the apparent inconsistency referred to.

“The whole of the seedlings raised by Mr. Bailey was from the same cross, the cross as given by me in my letter to the Committee. You may think it paradoxical when I say in the *Journal of Horticulture* that it is a founding; but I hold that the two statements are perfectly reconcilable. The first refers to the origin of my Vine, the second to its immediate relationship to the plants now at Alnwick Castle, as the rest of my letter clearly shows.

“In addition to previous evidence I have now that of Mr. Todd, head gardener at Rawcliffe, Langside, Glasgow, and formerly foreman at Alnwick Castle Gardens, who planted the Vine in question, and testifies that there were no other seedlings than those left by Mr. Bailey and known as his. My explanation, then, on this point is that my statement about the uncertainty of the parentage and connections had nothing to do with the original production of the Seedling, but referred to the immediate source—to the particular plant from which my plant was taken, and its relation to those now being declared to be the same under the abstract title of Cassey's Seedling.

“As for the name Clive House Seedling, which you may remember I reluctantly gave on the spur of the moment, I have no wish to maintain against the wish of the Committee if they look upon it as implying what I have never once pretended, that it was my own raising, and I am quite willing to adopt any name they may suggest, provided it should be free from local or personal bias.

“In closing I must strongly disclaim the charge of the Fruit Committee that I withheld the facts as to the origin of the Grape. My readiness to answer all questions, my immediate contradiction in the *Journal of Horticulture* of a groundless claim, and my full statement of the facts of the case, ought to have precluded such a charge; and I trust that the Fruit Committee will see their way to withdraw it and to place their withdrawal on their minutes.

“I have nothing to conceal. If required I am prepared to show that I obtained my Vines fairly and openly and am indebted to no man for them, and that I am not to blame if a mistake was made which gave me possession of this one and has preserved it from destruction. At the risk of unpleasant personalities I will if required defend my own name and property, and I trust that my present silence on personal transactions will not be deemed a withholding of the facts of the case. If the Fruit Committee have any questions to ask or any suggestion to make I shall give them my careful consideration.—I am, Sir, &c.—D. P. BELL.”

[The farther discussion of this subject may now cease. Everything has been said that can throw any light upon it, and that is all the public care for. We think the Fruit Committee did quite right in giving the new name of Alnwick Seedling, as this associates the Vine with the place where it was raised without any invidious reference to any person in particular.]

PRIMULA MINIMA.

VARIOUS are the popular names of this smallest known species of the genus; Smallest Bear's-ear, Smallest Auricula, and Snow Rosette are among them.

“It has been supposed to be extremely impatient of cultivation when removed from its natural abode, the tops of the highest mountains of the South of Europe, which it ascends to the limits of perpetual snow, at the elevation of 7000 to 8000 feet above the level of the sea.

“The corolla is large in proportion to the plant, and varies from pink to violet-purple and white; sometimes it equals all the rest of the plant together. The herb of the wild specimen is still more diminutive than in the cultivated one.

“Rootstock about as thick as a large quill, blackish when old; fibres white. Leaves cuneate, half an inch long, disposed in rosettes, very smooth, shining, coriaceous, deeply toothed at the end with pointed teeth. Scape obovately three-cornered, shorter than the leaves, one, seldom two-flowered. Involucre nearly of one piece, oblong, chafy. Calyx tubular, five-cleft; segments rounded, short obtuse. Corolla subsessile, often as large as all the rest of the plant together; faux furnished with a whitish nap; limb spreading; segments cleft in two for half



Fig. 25.—*Primula minima*.

their length like the letter Y. Capsule very blunt, shining.” —(*Botanical Register*.)

This species is not only noteworthy on account of its distinctness, but it has been found to have a tendency to cross with other species, and may be useful as a parent in raising new varieties of these increasing popular flowers. *P. Flörkeana* is the result of a cross between *P. minima* and *P. glutinosa*. It is a little singular that while *P. auricula* is a prolific parent, it has been found that a cross between it and *P. minima* cannot be effected.

QUEEN ONION FOR SPRING SOWING.

A FAILURE of part of the autumn-sown Onions has induced me to procure an extra quantity of the seed of Queen Onion, and to sow a few ounces of it upon a sheltered border with a

southern aspect in February, for the purpose of keeping up the supply at that critical period when the autumn-sown crop becomes exhausted and the regular spring-sown bed is still unfit for use, as will undoubtedly be the case this year. In such an emergency the quick growth and early maturity of the Queen reader it of especial value. By the time the young Onions are large enough to handle the soil may fairly be expected to be dry enough to enable us to transplant them from the seed bed. This plan is sometimes adopted for the general crop, and very successfully too. It is advisable for its economy, no seed being wasted; and in such a wet season as this, timely sowing may be done on a specially prepared border while the main quarters are yet wet and sodden.—E. LUCKHURST.

FICUS PARCELLII FRUITING.

This plant was fruited here in 1875, and since that time young plants have produced fruit profusely, having borne Figs in all stages of growth. This is one of the finest of decorative plants when well grown, and should have a place in every collection of stove plants.—RICHARD NISBET, *Asuarby Park Gardens*.

P.S.—Mr. B. S. Williams of Holloway showed a plant of it at the Crystal Palace in fruit the same year.

We have a plant of this which bore sixteen fruit last summer. The fruit is of the size described by your correspondent on page 176, and when ripe are beautifully striped and mottled. We have also some young plants which were struck from the above plant last August which are in fruit now. The fruit pushes from the axils of the leaves. *Ficus Cooperii* is also in fruit in our stores.—WILLIAM COOMBER, *Superintendent Royal Botanic Gardens, Regent's Park*.

INSECT PESTS.

MR. ANDREW MURRAY has applied to Government to aid in destroying the insects which destroy our crops. "He wishes to see some united active steps taken for clearing whole districts at once of pests. If united action could by any means be secured, the work would be simple. A scientific inspection of a district would decide, with regard to a particular pest, the condition of development in which it would be on certain days. Instruction would be given as to the course to be adopted, and if this were simultaneously acted on throughout a district, the pest might be checked if not entirely removed. It is sincerely to be hoped that either some society or the Department will take so important a matter up.

"The attempt is not new. It has been already tried on a greater or less scale, in various ways, and with more or less success both in this country and on the Continent—the degree of success being almost invariably correspondent to the care taken and the extent of the district subjected to the experiment. Its importance is, moreover, daily becoming better recognised. During the present year the governments of France, Belgium, and America all have had legislative measures on the subject before them. Switzerland has already acted, and Italy, it is understood, is about to do so.

"In France the destruction of hurtful insects has been long made compulsory by legal enactment. This attempt has hitherto failed from the unavailability and unworkableness of the law; but a new *projet de loi* is now before the Senate which is expected to remedy the defects of the old law. A full account of the whole progress of legislation on the subject in France is given in the *proposition de loi* on which the above *projet de loi* is founded. The "*Journal Officielle*" (of 28th June last) contains these documents.

"In Belgium a rural code is at this moment in preparation, in which power is taken to compel the destruction of insects, but it is reserved for royal warrant (*arrêté royale*) to direct the measures to be taken and the machinery of action.

"General and simultaneous voluntary efforts have been tried in many countries by offering prizes for the destruction of the injurious insects, enlisting school children in their search, &c., and where this has been done under the auspices of some central authority it has had good results. For instance, in 1868, which was a very bad year for cockchafer on the Continent, the central Agricultural Society of Saxony organised a scheme under which they made an energetic appeal to the land-owners, magistrates, manufacturers, &c., begging them to assist in getting the insects collected, and under that appeal vast numbers were destroyed. The difficulty, however, has

usually been to get a central authority of sufficient weight and authority and extent of influence to charge itself with the task.

"He would humbly submit that some such permissive measure conducted under the authority and direction of the Government would be best suited to the requirements of this country. Compulsory legislation is probably premature, and at any rate could be more effectively demanded if the permissive action had been tried and failed. A central directing authority is absolutely essential; if the experiment is to be tried let us use our best means.

"He would suggest that next year the attempt should be made in two or three counties to begin with. Cheshire, Lancashire, and Derbyshire have suffered greatly for some years past from the Onion and Carrot flies. Let the diminution or extirpation of these flies in these counties be the first experiment. A trial to that extent would neither be troublesome nor costly, and it would to a certain extent serve as a test and guide for further proceedings. All that would be necessary would be the circulation in these counties through the clergymen, schoolmasters, municipal authorities, and local papers, of an appeal urging every one to pull up and burn his infected plants (which are easily distinguished) on a particular day about a certain date, and to get the parochial authorities to take some trouble to see that this is done. Some brief lectures or explanations of what is wanted should also be given in as many parts of the counties as possible a few weeks previously.

"Two or three years' perseverance in such a course should gradually diminish the numbers of the insects; and the process, if successful, should each year be extended to other insects and other counties until the whole kingdom is embraced."

GLADIOLUS DISEASE.

ANYONE who thinks for himself and has the courage of his opinions, is sure at some time or other to differ from those who are engaged in the same pursuits as himself, and so although Mr. Kelway grows Gladioli by the acre, and I only by the hundred, we have never been able to agree on the subject on which he has written. I hope to discuss it by-and-by when I have more leisure, but I must ask of him kindly to say where in my little book on the subject I have said that it is contagious? I fancy I know the passage which has led him to this conclusion. At page 43 I have said, "I some little time back submitted some bulbs of Gladiolus to our most eminent vegetable physiologist, the Rev. M. J. Berkeley, who said it was a disease similar to that which attacks *Crocus cornu*, and is described in the Horticultural Society's Transactions as an ulceration of the corolla, similar to that which takes place in the Potato. No cause is there assigned for it. It is not fungous, although fungi come afterwards. It is contagious." All of which are Mr. Berkeley's words, not mine, and have reference to the *Crocus*, and not to the *Gladiolus*.—D., *Deal*.

NEW BOOKS.

Text-book of Structural and Physiological Botany. By OTTO W. THOM. Translated and Edited by A. W. BENNETT, M.A., &c. Longmans. 1877. Small 8vo., pp. ix. and 479, with copious illustrations.

A Manual of Botany (Anatomical and Physiological) for the Use of Students. By B. BROWN, M.A., Ph.D., &c. Blackwood. 1874. 8vo., pp. xviii. and 614, with copious illustrations.

It has long been remarked by examiners in botany that there must in general be some great fault in the mode of teaching, or students could not go up to a competitive examination so utterly ignorant of everything in the shape of practical knowledge. From the time when Professors Henslow and Lindley first commenced examining at the University of London great stress has always been laid upon this part of the examination, but, notwithstanding a continued practice of many years following out their view, examiners still make the same complaint. Students go up with a mass of book-work, such as it is; but if a common Hyacinth, Tulip, or Primrose is put into their hands, it has sometimes happened that not one of these common plants was recognised. Even a Primrose on the river's brim was not a Primrose to them; or, if known, it was nothing save a yellow Primrose. Now the cause of all this was believed to be an essential fault in the greater part of the manuals placed into the hands of students, and consequently a misapprehension on the part of instructors of the proper way

of teaching botany. It is a remarkable fact that two years since not one person who went up for the Civil Service of India, on the question being asked, was acquainted with Oliver's "First Book of Indian Botany," which could scarcely have been the case had not teachers been content to travel in the old beaten rut.

This matter has been brought painfully to our mind by the two publications at the head of this article; the former destined for school students, the other, in some respects less pretentious, apparently for a slightly more advanced time of study. Both begin with complicated questions as to the nature of cells and their mode of development, before an acquaintance has been made with the more apparent organs of a plant or the slightest knowledge of the objects about which the science is concerned, and the consequences is that the student is either utterly disgusted and throws up the matter in despair, or acquires a mere smattering of hard names and ill-digested facts, which he is willing to get by rote for the mere purposes of a competitive examination, with the foregone determination to throw the whole aside when it has answered his self-interest, without in the slightest degree doing what it was intended to do—as to opening his mind or giving him a taste for observing with profit the stray pleasures which are spread abroad with a bountiful hand, but are no sources of pleasure to the disgusted crammer. There is much philosophy in the words of the great French novelist, "I have always thought that it is more easy to descend from the whole to a part than to ascend from the part to the whole. It is a maxim of algebra that we should proceed from the known to the unknown, and not from the unknown to the known."

The translator of Thomé's text book has done his part in rescuing it from an objection which we should at once consider fatal in a book placed in the hands of English students, ignoring as it does almost everything that has been done in this country; for though comparatively little attention is paid here to physiology, while we are however, on the contrary, strong in systematic botany, it would be easy to point out many exceptions, and Darwin at least is the prince of physiologists. But, apart from this, how can a boy obtain a clear knowledge from such disquisitions as that with which the first pages commence, where he will be left without anything save a confused conception of what a cell really is, and will run the risk of thinking that there may be a cell without any cell wall? It would be easy to point out matters in which the author is evidently wrong, but this is not our object, but to show that such treatises are comparatively useless as far as English students go, for we are not looking to what may be suitable to the current German mind; and if more advanced students want a manual, we should rather at once recommend Sachs's book, notwithstanding its acknowledged difficulties. Indeed, we are forcibly convinced of this in comparing the one with the other. Nothing is in general so unsatisfactory as a mere compendium. We do not deny that the book contains a great deal that is valuable, and the illustrations are for the most part good, and are often on such a scale as to make them more intelligible; but we cannot conceive that to a beginner such an illustration as that at page 57 and the accompanying text can convey any idea to a schoolboy. If the book is used at all, we should recommend beginning with the fourth chapter, and when that is mastered, with some practical comparison of well-known examples, it will be time to enter on the consideration of the more recondite structures.

The work of Dr. E. Brown, as regards the time of publication, appeared three years before the translation of Mr. Thomé's volume. As it comes from the hand of a man of great experience it may well be expected to contain much of interest, and it does not labour under the same charge of ignoring British authorities, as the copious references in the notes amply testify; nor does it attempt in one volume to adopt what he calls the time-honoured conventionality prevailing in text books.

"The science," he says, "has become now so extensive, that if the student is to have in a manual of this nature anything better than a mere smattering of the well-worn facts of science, so interlarded as to be most repulsive with technical names in use, obsolete, or which ought to be abolished, or rather never to have seen the light of print, it is impossible to crum into one moderately sized volume anatomy, physiology, classification of the natural orders, palmo-physiology, and phyto-geography. Either the volume must become inconveniently bulky, or the outline given so meagre as to be really useless." With this we entirely accord, and we only wish that our author had followed

the example set by Oliver in his lessons in elementary botany, in which case his volume would have appeared in a useful contrast with many other manuals. It would be here again easy to point out faults; but in so extensive a science, where every day is modifying what was supposed to be accomplished yesterday, and in some cases wrong notions might be accepted—as, perhaps from inadvertency, the student might be led to conclude that the elaters of Jungermannia and the so-called elaters of Equisetum are of the same nature, from the reference which is given to the figure. But, as said before, this is not our object, but to call especial attention to the best mode of studying and teaching botany, convinced as we are that till some change is made in this direction we shall have still in the greater number of cases the same unsatisfactory results. Still less do we wish for a moment to detract from the valuable mass of information which, in many other respects, this excellent volume contains.

EXHIBITION PANSIES.

MR. MILLER'S contributions on Pansies have afforded me much pleasure. When one reads of special societies for the encouragement of different florists' flowers—Chrysanthemums, Carnations, Auriculas, &c., surely something may be done for the purpose of giving an impetus to the cultivation of a flower so beautiful as the Pansy. Is it not possible to offer prizes—adventitious prizes—for Pansies at some of the special shows? If it is, and competition could be stimulated, those shows would be rendered additionally attractive, and visitors would have an opportunity of enjoying such flowers as they little dream of being in existence. Florists would then be able to appreciate the efforts of such men as Meers, Downie, Dicksons, Hooper, &c., who have done so much in rendering our gardens attractive and furnishing varieties of Pansies of such sterling merit.

Pansies are, I fear, not sufficiently appreciated in the south, but the time must come when their claims will command the attention of all lovers of hardy flowers, and the heat and drought which are supposed to be so inimical will only be regarded as incentives to further effort in perfecting the culture of flowers which are worthy of a place in every garden in Britain.

In the north Pansies are regarded as amongst the most beautiful of hardy flowers, and when well cultivated they afford as much gratification to visitors as any other occupants of the garden. In the garden which has been under my charge for a number of years, and where flowers of all kinds are appreciated, those which give the greatest amount of satisfaction are Roses and Pansies.

I am particularly pleased to find that Pansies have such an able champion as Mr. Miller, and I shall anticipate with pleasure his promised editorial notes. I trust they will tend to dispel the delusion that Pansies can only be well grown in Scotland, and perhaps they will remind the patrons of florists' flowers in the south—Messrs. Dombrain, Dodwell, Douglas, &c., that there are other flowers worthy of their patronage besides Carnations and Auriculas. As to the mode of exhibiting I concur with "C. R. Notts," that Show and Fancy Pansies are sufficiently numerous and, in their sections, distinct as to merit separate classes. If exhibited in mixture the tendency would be to destroy the distinctive features of two clearly defined types of beautiful flowers, which I think is undesirable.

—A NORTHERN GARDENER.

MICE AND RED LEAD.

HAVING the valuable evidence of so large a number of experienced gardeners at your disposition you will perhaps scarcely care for that of a lady amateur. Still, I will venture to offer it as at least practical. Last spring I planted two rows of early Peas, having first thoroughly wetted them with linseed oil, and then shaken over them red lead until they were well coated. I placed wires over the rows and waited in expectation of the usual promising-looking green shoots. To my dismay scarcely more than one-third appeared, but ugly gaps of 10 or 12 inches were left, and on close inspection in these gaps I found many remains of my tenderly-cared-for Peas in the shape of roots and red skins. In vain I searched for spaces by which sparrows or even bluebirds might have entered, and was fairly puzzled until on a fine morning, lifting a seed pan placed on a bank some 30 feet distant, a hole beneath revealed two bright black specks, which moved, appeared, and disappeared—a mouse! Forthwith my sharp little terrier came to my aid, and turned out a nest of four young mice, and at

the same time certain vermilion-coloured skins, which too plainly explained the thievish propensities of another mouse.—
A KENTISH BEE.

GLAZING WITHOUT PUTTY.

AFTER seeing the article on this subject by a "STEWART AND GARDENER" I cannot resist the temptation to contribute my experience on the subject of glazing without putty. My opinion is that a "STEWART AND GARDENER" is treading in the right direction, and his nearly twenty years' experience ought to be received as conclusive evidence that glass structures can be made to exclude water partly without putty, and entirely without it on the top side. I think the past was a favourable season for trying whether any method of glazing will answer or not, for the number of rainy days and depth of rainfall since last September exceeds anything we have had in my recollection.

Last autumn I erected ainery 60 feet long by 9 feet wide, with the roof at an angle of 45°; and as I am only a working amateur and with limited means my study was for cheapness and effectiveness, two points which I think I have obtained

on which the glass rests and into the groove, and by having the square cut as shown each side of the sashbar would get its proper share of such condensation; but if the glass was cut with the bevels all one way, one groove on one side of the sashbar would have to take all the water and the other side none, which might not answer the purpose intended.

This notice of glazing without putty originated from an inquiry in your Journal of November 16th last year, signed "D. P. B.," who asked "if you knew of any vineries glazed with roof glass butted." I replied in your issue of November 30th that I could show a method of doing so from practical experience, after which I had many communications, which I replied to privately, not wishing to figure in the Journal at that time as an authority on the subject of glazing without putty and no lap; but since then a brick and tile manufacturer in this neighbourhood has created a large vinery and glazed the roof after this plan, and it answers well, although at an angle of about 35°. He has also brought out a new kind of flooring brick for vineries and greenhouses which can be walked upon perfectly dry, still in the indented pattern a quantity of water will rest for evaporation. The floor has a neat appearance, and no doubt when advertised this kind of brick will make its way into most new erections. I am now superintending the erection of a vinery 25 feet by 13 feet, with the roof at an angle of 40° to be glazed with lapsless squares and no putty, knowing that putty does more harm than good, especially on the top side of a sashbar.

Your readers will perceive the bevelled edge on which the glass rests, which is all-important in assisting any condensation to fall into the groove, also taking care the cap does not press hard upon the sprigs which keep the glass down. By using say four coats of Carson's anticorrosive paint on the top side of the sashbar before they are fixed there will be no fear of any wet penetrating the wood, but as I began with the subject of cheapness I must conclude so. My bars had two coats of gas tar and quicklime mixed to the consistency of thick paint and laid on the top side before they were fixed, which I have found in other work resists wet better than anything else. Your readers must observe that I am no gardener, but having a fancy for a vinery, and, like many other working amateurs with limited means, had to study cheapness with effectiveness—two things which I think I have obtained, and the few hints I have given here on glazing may be a benefit to some amateurs who feel a pleasure in doing the work themselves.—THOMAS HARDCASTLE, *Valuer, Boroughbridge, Yorkshire.*

DR. ERASMUS DARWIN.

His baptismal name did not influence his mental convictions. He was no Erasmus in Christianity, and so devoted himself too exclusively to an acquaintance with second causes. He was a native of Elton, near Newark, Nottinghamshire, where he was born December 12th, 1731. After going through the usual school education under the Rev. Mr. Burrows at the grammar school at Chesterfield with credit, he was sent to St. John's College at Cambridge. There he only continued until he took his bachelor's degree in medicine, when he went to Edinburgh to complete his studies, which being finished and having taken the degree of doctor in medicine, a profession to which he was always attached, he went to Lichfield and there commenced his career of practice. Being sent for soon after his arrival to Mr. Inglis, a gentleman of considerable fortune in the neighbourhood who was ill with fever and in so dangerous a state that the attending physician had given up the case as hopeless, the doctor had the good fortune to restore him to health. This gave him so high a degree of reputation at Lichfield and in the neighbouring towns and villages that his competitor, who was before in considerable practice, finding himself neglected and nearly deserted left the place. Dr. Darwin soon after married Miss Howard, the daughter of a respectable inhabitant of Lichfield, by which he strengthened his interest in the place. By this lady he had three sons. In 1781, having married a second wife, he removed to Derby, where he continued to reside to the time of his death, which happened on Sunday the 18th of April, 1802, in the seventieth year of his age. Six children by his second lady, with their mother, remained to lament their loss.

The doctor was of an athletic make, was pitted with the small pox, and he stammered much in his speech. He had enjoyed an almost uninterrupted good state of health until towards the conclusion of his life, which he attributed, and reasonably, to his temperate mode of living, particularly to his

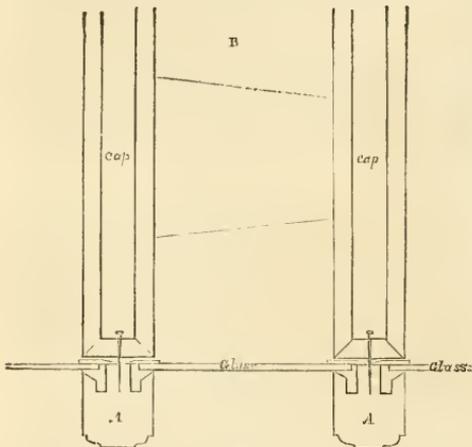


Fig. 26.

in the method of glazing. But I go a little further than a "STEWART AND GARDENER"—I have used no putty and no lap, and if I could have commanded a wet season in order to try whether my method of glazing would answer or not I could not have been better accommodated than I have been during the past four months; yet scarcely a drop of water could I see from the roof, and not one from the squares where they join. And in furtherance of the object I have in view—namely, to assist all working amateurs like myself, through your journal, who like to follow my plan in glazing with lapsless squares, I send a section of my sashbar A, which is quite plain and can be made of any desired strength according to the size of the vinery. My sashbars are 3 inches by 2½, with squares 24 inches by 14, 21-oz. glass, which are simply fastened down with four wrought-iron sprigs (copper would be better) at the corners of each square. The cap is nailed on with four 2-inch nails with the heads left out a quarter of an inch, so that they can easily be drawn and the cap taken off should a square get broken and require renewing; then it is only letting the squares above the broken one slide gently down, putting the new square in at the top, so that they may all fit close at the joints. Other minor details in this method of glazing will easily be seen by anyone who will give his attention to the subject.

If I had another roof to glaze the only thing I should alter would be to have the squares cut 1 inch out of square where they join edge to edge, or, in other words, to have them cut bevelwise (as per sketch N), so that any condensation underneath the glass or any oozing through the joints from the top side would find its way to the side of the sashbar, and by having no putty underneath and with the unevenness of the glass will allow the condensation to fall on to the level edge

moderation in the use of fermented liquors. This practice he recommended strenuously to all who consulted him.

His frequent journeys into the country on professional business contributed also in no small degree to the preservation of his health and his faculties, which latter remained unimpaired to the day of his death. His death was sudden, occasioned by a fit of what he was used to call *angina pectoris*, which he had several times experienced, and always relieved by bleeding plentifully.

As Dr. Darwin was a votary to poetry as well as medicine, he occasionally sent his effusions in that way to one or other of the monthly publications, but without his name, conceiving, from the example of Akenside and Armstrong, that the reputation he might acquire by his poetry would operate as a bar to his advancement in the practice of medicine. His "*Botanic Garden*," in which he celebrates what he calls the "*Loves of the Plants*," the first of his poems to which he put his name,

was not published until the year 1781, when his medical fame was so well established as to make it safe for him to indulge his taste in any way he should choose. Besides, the poem was so amply furnished with notes containing the natural history and accounts of the properties of plants, that it did not seem very alien from his profession. The "*Botanic Garden*" is comprised in two parts. In the first the author treats of the "*Economy of Vegetables*" in the second the "*Loves of the Plants*." The novelty of the design, the brilliancy of the diction, full of figurative expressions, in which everything was personified, rendered the poem for some years extremely popular.

In 1793 the author published the first volume of "*Zoönomie*, or the *Laws of Organic Life*," &c. The second volume, which completed the author's plan, was printed in the year 1796. As the eccentric genius of the author was known, great expectations were formed of this work, the labour



Fig. 27.—DR. ERASMUS DARWIN.

we were told of more than twenty years. It was to reform, or entirely new model, the whole system of medicine, professing no less than to account for the manner in which man, animals, and vegetables are formed. They all, it seems, take their origin from living filaments susceptible of irritation, which is the agent that sets them in motion. Archimedes was wont to say, "Give me a place to stand on and I will move the earth;" such was his confidence in his knowledge of the power of the lever. Our author said, "Give me a fibre susceptible of irritation and I will make a tree, a dog, a horse, a man." It would be useless to enter into an examination of the *Zoönomie*, which has long ceased to be popular. Those who wish to see a complete refutation of the sophisms contained in it will read with satisfaction "*Observations on the Zoönomie of Dr. Darwin*," by Thomas Brown, Esq., published at Edinburgh in 8vo. in 1798. In 1801 the author published "*Phytologia*, or the *Philosophy of Agriculture and Gardening*;" but the public, tired with the reveries of the writer, let this large book of six hundred pages in 4to. pass almost unnoticed. As little attention was paid to a small tract on female education, which had little indeed to attract notice.

We are admirers of the poetry, as well as of the scientific

forecastings of Dr. Darwin. He made common topics attractive, as when he wrote—

"There are of learned taste who still prefer
 Cos Lettuce, Furragon, and Cucumber;
 There are who still with equal praises yoke
 Young Peas, Asparagus, and Artichoke;
 Beaux there are still with lamb and Spinach nurs'd,
 And clowns eat Beans and bacon till they burst.
 This loom I ask of Fate, where'er I dize,
 O be the Proteus form of Cabbage mise;
 Kale, Colewort, Cauliflower, or soft and clear
 If Broccoli delight thy nicer ear,
 Olive, rural Muse! the culture and the name
 In verse immortal to the rolls of Fame."

He foresaw the future when he penned—

"Soon shall thy arm, unconquer'd Steam! afar
 Drag the slow horse or drive the rapid car;
 Or on wide-waving wings expanded bear
 The flying chariot through the fields of air."

AURICULAS AND THE WOOLLY APHIS.

I HAVE to thank my friend Mr. Horner for his note and good wishes on this subject, and am sorry to say that I did not read his notice of it in the October number of the "*Florist*

and Pomologist," or should have been on the look-out. I grieve to add that to all appearance I shall lose one-half of my stock—a sad loss at all times, but doubly so under the circumstances of the proposed Exhibition at the Crystal Palace, and after having had last season the finest bloom I have had for many years. I am going next week to attend to them, and will then say what I have found. Have any of your correspondents seen the insect?—D., *Deal*.

SEDUM SPECTABILE.

SOME time ago my name was mentioned in the Journal in connection with this fine *Sedum*, and as it is becoming such a popular plant, and just the one for an amateur to grow, I will state a few particulars about it. In the first place, I bought two plants which had been struck in the spring while they were in bloom. After flowering had ceased the stems were cut off and the plants were planted out in the rockery. When February came there were numerous little shoots springing up from them, which when large enough were taken off and rooted in pots under a hand-glass without heat. These were potted, and the tops of these again were taken off and rooted in the way above described. The plants which were struck first pushed many shoots—too many for such young plants, therefore I thinned them out to about three to each plant, and made cuttings and rooted them. These were grown in pots till the bedding arrangements were made, when the late-struck plants were planted out in beds by themselves, and they flowered late, commencing in August and continuing throughout September; their foliage was also very attractive, being different to any other plant in the garden. Every visitor admired the plants, and I have received many inquiries respecting the qualities of this *Sedum* as a flower-garden plant.

My reply is that it is a very beautiful plant and can hardly be put out of place. It does for bedding by itself, or among subtropical plants it is very effective. For growing as a single specimen in the herbaceous border I know of no plant more acceptable; and in vases, too, it thrives remarkably well and looks noble and attractive. As a pot plant there is very little trouble in growing it, and in all situations it will thrive, and I may safely say in common garden soil. My plants have been in the ground two years and have stools more than a foot over and are shooting up very thick, I shall therefore thin out the smallest of the growths, and the others will grow up the stronger and produce fine heads of flowers. Mr. Robson has also grown this plant in splendid condition at Linton Park.—T. RECORD.

[Mr. Record has done well by directing attention to this valuable hardy herbaceous plant, than which few will better reward for high cultivation.—EDS.]

ASPECTS OF NATURE—FEBRUARY.

DURING February we have almost the first indications of spring. A mild sunny day at this time appears to change the aspect of nature as if by magic. While the sky was grey and overcast all nature appeared clothed in the same sombre tint, but a glint of sunlight on heathside or brook brings out each swelling green bud in bright contrast to brown leafless stem and bare branch, and seems to impart joyous life to every ripple on the water. The Hazel still hangs out its pretty yellow tassels; and in sheltered copse and warm spots on hedgerow banks the wild Honeysuckle and the common Elder push forth the first green leaflets. The Snowdrop, "the early herald of the infant year," peeps forth in our gardens, and mild open weather will give us this beautiful harbinger of spring in clustered profusion, drawing our attention from their desolate surroundings to contemplate their pale pendulous bells, which tinkle fairy-like with every breath of wind and bear a streak of green on every petal, as though they, the first flowers of the year, bore a touch of Nature's favourite universal colour as a distinctive badge.

The birds come with the flowers. The robin, that constant friend of man, has cheered the dreary winter mornings and early afternoons with his joyous if not thrilling pipings. Now, too, the woodlark, one of the earliest and sweetest songsters of the grove, begins to trill his melodious song; while the harmony of the fields and woods is rendered still more entrancing before the end of the month by the full, rich, enchanting notes of the blackbird and thrush.

In strong contrast to the inimitable songs of the smaller birds we have the hoarse cawings of colonies of rooks, which

now begin to pair, and appear to let the world in general know they contemplate commencing housekeeping at once from the incessant noise and fuss they make over building their nests. The wonderful instinct with which all living creatures are endowed is sufficiently apparent in the building of rooks' nests, as these birds break with their strong beaks from the living trees the young green twigs pliable and full of sap: dead sticks could not be interlaced with the same facility, nor would they bear the weight of such heavy birds.

On south walls the flowers of the *Pyrus japonica* are all aglow, the beautiful rich scarlet blossoms having none of the pale delicacy of tint so commonly ascribed to the early flowers of spring. The Crocuses also show no lack of colour, and seem to have guarded, from the time of their planting deep down in the brown earth, the gold and purple of autumnal skies, to bring these gorgeous tints to gladden our hearts in early spring.

The unexampled mildness of the season has this year made February exceptionally rich in the number of plants in leaf and bloom. Such frosts as have occurred have had but little effect on the general forwardness of vegetation. In many places the Elder trees are as green as in early summer, and the wild favourites of March have come to us before their time. White and purple Violets are in full bloom, Primroses may be gathered in abundance, the Mezerion is in flower, and in appearance the month has many of the characteristics of March.

As a rule February is a wet month, and this season has proved no exception, save that the "icy bonds" have been conspicuous by their absence. The poet's description is as true to nature as of yore—

"Now shifting gales with mild influence blow,
Cloud o'er the skies and melt the falling snow;
The softened earth with fertile moisture teems,
And, freed from icy bonds, down rush the swelling streams."

In very rural districts, where on high banks and hedgerows Gooseberry and sometimes Currant bushes have taken root and grow up among the Hawthorn, the bright tender green of their early foliage is very conspicuous.

During the moist warm days of early spring headlands and byelanes are in many places carpeted with the bright green leaves of the Ground Nut. The foliage of this little-regarded wilding is invaluable for bouquets and vases at this time of year; its Fern-like character and exquisitely delicate green tint make it most suitable for arranging with the more carefully tended blossoms of the greenhouse.

The seedtime is at hand, and in preparation for its advent the farmer hastens forward the work of preparing the land; and Virgil's description is as applicable now as when it was written so many centuries since—

"While yet the spring is young, while earth unbinds
Her frozen bosom to the western winds;
While mountain snows dissolve against the sun,
And streams yet new from precipices run;
E'en in this early dawning of the year
Produce the plough and yoke the sturdy steer."

—T. S. J.

THE "BROWNTAILS" AGAIN!

ALREADY have I occupied some small space in the Journal on two occasions, when I have been referring to the economy of the Brown-tail Moth as it came under my observation in a district of North Kent. Though I do not wish the reader to suppose that I have "Browntails on the brain," I have continued to watch the habits of the colonies of the Brown-tail (*Liparis chrysothæa*) which reside in the vicinity of Gravesend and Chalk. The increase in numbers that was notable in 1875 as compared with the two preceding years was not followed up in 1876 by a still larger accession of caterpillar devourers, and the reason, I apprehend, was this, that many of the broods died off, wholly or partially, during the cold spring and the unfavourable summer of 1876. But yet I see at this moment far more colonies than I could wish to see studded over the Hawthorn hedges awaiting the bursting of the April buds. Thus, for instance, in one part of a road where the hedge is made up of shrubs standing at eight intervals apart I counted twenty-four nests upon one bush, representing at the moderate average of fifty to a nest, more than a thousand caterpillars to attack the foliage by-and-by. It is a curious circumstance in the history of the Brown-tail caterpillar, that though they are gregarious the whole brood descended from one parent do not usually form one family. The mother moth in the process of egg-laying seems generally

to shift her quarters two or three times; hence few nests are found to contain more than eighty or a hundred individuals, some perhaps not more than twenty or thirty. Of course it is possible that in certain of these instances the small parties are the survivors of larger colonies which had started on the emergence of the caterpillars from the eggs.

The question was put by me whether any gardeners could state from their own experience that they had found the insect injurious either to fruit trees or to the Rose, as has also been insinuated against it. If the absence of replies is not conclusive evidence in favour of the harmlessness of the species so far as Britain is concerned at present, it at least tends to show that no person has any better accession to make. Yet the Brown-tail has an undeniably bad repute; a century or so ago it occasioned alarm in many parts of England, and even had the honour of a pamphlet devoted solely to its history, containing an amusing farrago of fact and fiction. The late Edward Newman assured me that he regarded the accounts published concerning the ravages of the Brown-tail, which accounts have often been referred to in entomological and horticultural books, as largely made up of mis-statements; but, then, it is also true that on the Continent, even to this hour, the species does prove itself a nuisance. In a letter I received from Mr. Doubleday of Epping during the spring of 1874 he mentions that a friend who had been in the south of France saw the Brown-tail caterpillars travelling by millions on the paths and roads, the authorities having to employ men to sweep them up on account of the annoyance they caused. Going about in that way there cannot be doubt that they "meant business"—that is to say, they were in search of food, and not likely to be very particular as to what Rosaceous plant they settled upon.

In various places in Kent, especially in localities not far from Gravesend, fruit culture is a matter of importance, and the proprietors of orchards and market gardens ought to be on the alert to ward off any enemy of which the inroads can be anticipated. Nothing is easier than to deal with Brown-tail caterpillars in the winter or spring, before they have begun feeding; and though in the hedges colonies are on the Hawthorn, Blackthorn, and wild Rose, yet when these hedges are in proximity to fruit trees, however tender of insect life we may be, I think anyone would be justified in reducing the number of the insect.

I should add that the Brown-tails in this locality are seemingly as yet confined to a few lines of hedgerow along the old Dover road near Denton, at East Milton, and near the village of Chalk; hence with little trouble 90 per cent. could probably be cleared off by the judicious use of shears. And here a point of some nicety might be raised. Let us suppose B has on his hedges this or some other insect likely to be injurious to the gardening operations of C. B does not trouble about it; but C, finding B will take no measures which C deems requisite, appeals to A, from whom both parties lease their lands. Can A for the sake of his other tenant and for his own (indirectly) oblige B to take steps to remove the pest? It would seem in fairness he should have the right, or else to intervene if B is inert, and himself do what may be done in the case.—J. R. S. C.

OUR BORDER FLOWERS—FRENCH HONEYSUCKLE.

YEARS ago *Hedysarum coronarium* was treated as a biennial, and is so treated still by some growers. Strictly speaking it may not be a perennial, but lasting from year to year as it does, and reproducing itself freely from seed, I have no hesitation in placing it as a perennial. The subject in hand is a strong grower and requires staking; it is then a fine object when well established, rising to the height of from 3 to 4 feet. Its handsome foliage, pretty red flowers and delicate perfume, claim for it a prominent place, especially where cut flowers are in demand, for it bears cutting well, continuing in bloom for a long time. It is a capital plant for shrubbery borders and open spaces, where, if desirable, it may be pegged down, and in that way it flowers as freely as when trained upright. *Hedysarum coronarium album* is a grand acquisition and ought to be in company with *H. coronarium*; when grown together they produce a fine effect. *H. roseum* is of much dwarfer habit and is desirable as a rock plant; *H. argenteum* with its silvery-grey appearance is not to be despised. *H. venustum* is, comparatively speaking, of recent introduction, but none of the family appear to attract much attention, as they are very

seldom met with. They are not at all particular as to soil or situation. The place intended for them should be well broken up to the depth of 2 feet, for, being strong deep-rooting plants, they require depth to develop themselves. They may be increased by division, but they are much better raised from seed sown in spring or summer, the plants being thinned-out and transplanted as the cultivator may think best.—VERITAS.

GARDENING IN ILLINOIS.

MR. B. O. ARMIST states in *The Prairie Farmer*:—"My aged mother, eighty-eight years of age (one of the two only persons living who were settled in Edgar county in 1818) has witnessed the rise and progress of our horticulture from its commencement to the present time, and with the weight of these many years resting upon her she reviews it with much pleasure, and often reminds me of the great variety of fruit that we now cultivate compared with what they had for years in the early settlement. She says that Nature was very kind to them in those early days in the profusion of her native fruits; that when she settled here, sixty years ago, the wild Strawberries grew in great abundance in the prairie. At my earliest recollection there was but a single variety cultivated in the gardens, and not much attention paid to these, as a supply of the fruit could be had by picking it on the common. The Hovey's Seedling was not received here from the east until 1838. It was a wonderful berry for that day. I have continued its cultivation along with many of the most noted varieties, and it is yet almost unrivalled in all its qualities.

"Wild Plums were also numerous in the forests and in the thickets, and could be gathered by the waggon-load, smooth and fair; not in the ruined condition we find them of late. Wild Grapes were plentiful, a small winter Grape according to the tops of tall forest trees, and the summer and fall Grapes spread over the shrubs and small bushes in the barrens and along the watercourses.

"The White Cape and Black Cape Grapes were the only cultivated varieties grown here for the first eighteen years of the settlement.

"In 1836 the Catawba, Isabella, Clinton, and York Madeira were introduced, all of which did well (fruit without a blemish) until 1853, when the rot appeared.

"Persons frequently called at the nursery for English Grapes, English Gooseberries, English Currants, English Plums, and English Mulberries, believing that all the fine fruit was of English origin.

"There were only six varieties of Pear known here previous to 1836. Of these the Mammoth, from the famous mammoth tree near Vincennes, Ind., was the queen of summer Pears, and as common on the farms of the early settlers as the Bartlett is to-day. The old Pound Pear, monstrous in size and easily grown, was king of the winter dessert, and we didn't know that there was any better variety. In 1836 my father received the Bartlett, White Doyenné, Flemish Beauty, Seckel, Julienne, Urbanist, and Colmar Van Mons, and by 1840 had collected over a hundred varieties of Pears.

"The following are the varieties of Apples that he brought with him to this country:—Winter Jannette, or Neverfail, Milan, Smith Cider, Yellow Pippin, Sweet R. I. Greening, Winter Queen, Black Gillyflower, Newtown Pippin, Hannah, Newtown Spitzenberg, Large Romantic, Little Romantic (Gillpin), Winter White, Lady's Finger, Hard Red, Shaker Red, and Priestly; Autumn, Rambo, Fall Winesap, and Harper's Sweet."

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

THERE are few gardens of large size where it is not necessary to head down and re-graft Apple and Pear trees occasionally. Sometimes a variety that has been introduced to the garden proves to be either worthless or not true to name. The best way in that case is to cut the tree down (as has already been advised in a previous number) and re-graft it. When the branches are large the best way is to work the trees on what is called the crown-grafting system; two grafts should be placed opposite to each other. Small branches may be whip-grafted. The grafts should be tied firmly with stout wax and then be clayed over. There are several sorts of grafting wax used, but we find stiff clay the most convenient. It is mixed with a quantity of cut hay, and when well worked together it does not crack after being exposed on the trees.

Some of the old authors recommend root-pruning to be per-

formed at this season, and we agree with you to a certain extent, and would limit the trees to be operated upon to those which showed very exuberant growth indeed, and were not likely to bear any fruit during the ensuing season. It is now generally agreed amongst practical men that the best time to root-prune is in November, and the earlier in the month the better. If the root-pruning is done now it should only be partially, by cutting a few of the main roots and placing round them some maiden loam free from manure. So far back as the time of Evelyn attention had been given to checking the flow of superfluous sap in fruit trees; but it is not certain that cutting the long bare roots to cause the formation of fibres near the main stem had been thought of. Evelyn recommended to lay bare the roots in the winter; but this is a dangerous practice, and with our present knowledge could not for a moment be entertained. A mistake is sometimes made in pruning newly-planted trees by cutting them in too close. When Roses are bought in and planted one year old from the bud, we cut them back to two or three eyes; and the old writers recommended the same practice with wall trees two and three years old. If the trees have been under good management in the nursery they will be well furnished with fibrous roots, and when this is the case the shoots should be cut back to two-thirds of their length only.

The present is a good time to plant Fig trees. They may be turned out of the pots, and all the roots that are matted round the ball should be laid carefully into some good loam—clayey loam is the best, and it should not be too rich, as the tendency of the Fig tree is to run too much to strong unfruitful growths. The branches, being easily broken, should be nailed to the wall. Cuttings taken off with heels and laid in against the wall in some fine soil will soon strike out roots. If any newly-planted fruit trees away with the wind to the extent of loosening them at the roots some support ought to be placed to them.

It is not our best practice to put out Strawberry plants at this season, but many persons do so. The runners are selected in the autumn and planted closely together in beds. They are now starting into growth, and no time should be lost in transferring them into their permanent quarters in deeply-trenched and well-manured ground. Plants put out at this time will throw a few flowers and would bear fruit; but it is better not to allow them to do so. In suitable clay soil the same plants will continue in bearing for many years. In light, gravelly, or sandy soil they will do better if the beds are renewed annually. In that case the plants must be put out early in August.

PINE HOUSES.

Fruiting plants in the earliest house are now going on well; some of the fruit is considerably advanced, and a few plants have it just showing in the centre. Much attention is necessary as to watering. It will not do at all to allow the plants to suffer for want of water. We look over the plants twice a week, and give manure water for every second watering. The temperature at night when the weather is mild is 70°, and even with cold frost winds it is not allowed to fall below 65°. We have not yet been able to place the succession plants into their fruiting pots owing to the cold weather. No time ought to be lost in seeing to this if the plants are intended to fruit early next year. Now that so much foreign fruit finds its way to our markets the most profitable variety to grow is the Queen, and this is also by far the best for summer fruiting. It is not well to allow too many suckers on the old plants. About two to each plant will be enough, and if the plants are not required it is much better not to allow more than one. Queens throw up suckers freely, sometimes from six to nine cluster round the base of a plant. Smooth-leaved Cayenne and Charlotte Rothschild do not usually throw up many suckers. With a higher temperature and increased solar light and heat more moisture is necessary, and this is applied both from the evaporating troughs and by sprinkling the walls and paths of the house with water as often as may be necessary.

ORCHARD HOUSE.

The Peach and Nectarine trees are now in flower, and as the weather is unfavourable for the setting of the fruit, more care is necessary in seeing that the pollen is applied to the stigma either by shaking the trees twice daily or by using a small brush of camel's hair. It is better to use the brush for shy-setting sorts, and it may also be well to take pollen from, say, Royal George Peach, and apply it to the flowers of Exquisite or Walbourn Admirable. With us the blossoms of Nectarines set more freely than Peach blossoms, but it is better withal to shake the trees once a day, about 10 A.M. Pear and Plum trees have been taken into the house, but they are not yet in flower. We have always found Pears the most difficult to set, but when the trees are placed in the lightest part of the house with air freely admitted, and the atmosphere kept as dry as possible, the difficulty is overcome. None of the trees must suffer by want of water at the roots, and if this is the case the fruit is sure to set badly. The shelves all round the house are furnished with Strawberry plants in pots, and seldom have we had a better show for fruit; the crowns are very large and plump, and they are now bursting into leaf. The pots are occasionally supplied

with weak manure water, and as soon as the fruit is set on the trees we shall syringe them and the Strawberries freely to prevent the attacks of red spider.

PLANT STOVE AND ORCHID HOUSES.

There is now plenty of work in these structures, as with increasing light and heat many plants are starting into active growth, and these requiring to be repotted must be seen to without delay. It is much better to repot now than to let the plants make much growth, as they will then experience a considerable check. The method of potting and composition of the soils have been frequently described, and it will be unnecessary to allude further to it at this time. All free-growing plants ought to be repotted if they are in small pots and it is intended to grow them on. Cuttings put in some time ago will now be rooted, and ought to be potted-off into small pots. If there is any sign of thrips or aphids in the houses it is best to fumigate with tobacco smoke until the pests are quite destroyed. If a few of these escape at this period they spread rapidly and do considerable damage, and it is very dangerous to use tobacco smoke when the young leaves of tender plants or Orchids have just been formed. Mealy bug should also be carefully watched. It is very difficult indeed to eradicate it from any plants where it has gained a foothold, and when the plants have been washed again and again, and you think not a vestige of the pest remained anywhere, the ardent cultivator is surprised to find a colony of young insects between the leaves at the points of the young growths of a choice *Ixora*, or on the succulent shoots of *Stephanotis floribunda*. There is no way of cleansing the plants but by constant watchfulness and destroying the insects as they appear.

Caladiums are now at rest under the stages in the stove, but they will be taken out presently and be supplied with water, and when they have made a little growth will be repotted into the same sized pots. Plants of *Poinsettia pulcherrima* are at rest in a cooler house. At this time last year there was a goodly display of floral bracts, but, from what cause we know not, they have dropped earlier this year. There are many plants subject to the attacks of red spider, and it is always best to destroy or keep it under by syringing if the plants have foliage or flowers that would not be injured by the water. The shadings for the roof have been put up, and they are used when the sun shines strongly, but not more than is necessary, and they are let down for a few hours only at mid-day.

We have been repotting and rebasketing some of the Orchids. A few are better potted at this season, others when they start into growth in summer. *Calanthes* must be repotted as soon as they start into growth. Ours were potted a week or two ago, and are already rooting freely in the fresh compost. The old soil is entirely shaken away from the bulbs, and the potting material, which is good turfy loam with a little decayed manure added to it, is pressed firmly round the base of the bulbs. The species potted at this time are all the *vestita* section and *C. Veitchii*. This variety partakes of *Limatodes* roses in its nature, and does not always grow so freely as the *vestita* section, but it requires similar treatment. *Angulos Clowesii* has also been repotted in a compost of about equal parts of turfy peat, chopped sphagnum, and clean potsherds; the pots are also clean, and are filled rather more than half full of drainage. The Indian *Crocuses* (*Pliconeas*) have also been repotted; the compost is the same and also treatment as for *Angulos*. Several other species of Orchids have been repotted; we like to do this as they start into active growth. *Cattleyas* will still endure a fair share of sun heat, but if the weather should be fine and the sun strikes the glass directly about mid-day we shall shade; the blinds have been fixed ready.

Disa grandiflora is a splendid Orchid when well grown. We are sometimes told "that it will do well in an ordinary greenhouse;" it sometimes succeeds admirably. At Chateaufort under the care of Mr. Speed it may be seen growing with great freedom in an ordinary Heath house with very little shade. It has failed at Loddon under exactly similar treatment; and Mr. Werd of Leyton could do nothing with it as a greenhouse plant, but grew it fairly in the cool Orchid house. It requires plenty of drainage and to be potted in peat and sphagnum.—J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

Francis & Arthur Dickson & Sons, 100, Eastgate Street, Chester.—Catalogue of Select Farm Seeds.

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

CHRISTIANITY SHOWS (W. S.).—We cannot publish such a list. They must advertise.

BOORS (C. F. Lamb).—London's "Encyclopedia of Agriculture."

PARAFFIN OIL (Juvenile).—Two wine glasses full of paraffin added to three gallons of water would not injure Orange trees at any time.

STRAWBERRIES (X. Y. Z.).—Vicomesse Héricart de Thury, Keens' Seedling, President, Sir Joseph Paxton, and Dr. Hogg.

ROSE.—Could the name of the Rose asked for by Mr. Luckhurst be Pierre de St. Cyr? I think he does not name the colour, but surely Gloire de Dijon is most well known to be so asked for.—C. R.

FORCING STRAWBERRIES (Essex).—We can best aid you by stating our practice. The plants grow in the house, but are introduced at fortnightly intervals in a bed, and planted 1 foot apart. We plant in March, dividing the old plants, securing at least one good crown, and it may be some smaller crowns to each division, and a fair amount of roots. They are planted so that the crowns are just covered with soil, which is light and rich, giving a mulching over the beds out an inch thick of short manure. The situation is open. In autumn after the leaves fall the plants are lifted and potted in 7-inch pots, and buried in ashes in a sheltered spot, and we introduce them as required to any heated house, such as a vinery started at the beginning of January. These plants flower in March, others being introduced at fortnightly intervals until April. They are very easily rooted in temperature of 50° to 55°, better if a few degrees lower to commence with. After they are in good foliage watering requires to be copious, liquid manure being given at every alternate watering. One half the plants only are taken up the first year, but remain in the house until potted; and in the autumn, the longest being dropped, they are taken up and potted into 9-inch pots, so that we have plants in 7-inch pots a year old, and others in 9-inch two years old. The latter are best, but they take up more room. The old plants are kept in a cold house or pit after flowering, not allowing them to suffer from want of water. In June those in 9-inch pots are turned out with the ball entire in rows a foot apart, and that distance between the plants; but those from 9-inch pots are cut in two, and if the halves have many crowns they are also cut in twain and similarly planted. They are well watered during dry weather, and usually commence flowering in the autumn, especially those which had not been divided. They are allowed to grow a year clear without being again forced. The cause of the leaves of your plants turning brown at the edges is no doubt due to the house having been fumigated. We always remove the plants from the house before fumigating, as no plants are so susceptible of injury from tobacco smoke as these, or the injury may have arisen from want of water.

VEGETABLES, &c., FOR SWAMPY GROUNDS (E. Highton).—If water floods in the winter no vegetable crop would succeed; otherwise from the most sandy soils it would be well to grow the following:—Cauli, Kale, Broccoli, Parsnips, and Celery. Plants most likely to thrive are *Acorus gramineus variegatus*, *Epiobolium hirsutum*, *Lysimachia threudica*, *Lythrum roseum superbum*, *Galbra palustris flore-pleno*, *Carex paniculata*, *C. pendula*, and *Mentha sylvestris trifidata*.

DRIVING WORMS OUT OF POTS (L. M.).—Place 1 lb. of quinine in a tub, pour over it three gallons of water, stir well, and let it stand forty-eight hours, then pour off the clear liquid into a watering pot. With a lump of rather stiff clay stop the holes in the pots, and saturate the soil for an hour. The limo water should rest on the soil, or it will not be effectual. The worms will either come to the surface or perish. Remove the clay from the drainage holes, and allow the limo water to run into a tub. Repeat the plan after the water has at the earliest opportunity. Soot water will not injure the Ferns nor destroy worms.

PRUNING AND POTTING BEDDING GERANIUMS (J. A. X.).—Cut the plants down now, but do not do it too closely, leaving a few eyes of last year's wood. When they are breaking freely, having shoots about an inch long, turn the plants out of the pots, removing most of the old soil, and set them in the same or slightly larger pots, watering carefully until the plants are in full growth. The cuttings turn black because you keep the surface of the soil too wet, or they may have been bruisd with the dibble in closing the soil about them. The plants require to be kept rather dry. We prefer inserting the cuttings in small pots singly, but they answer well if placed thinly around the sides of a pot.

TROPEOLIN SPECIOSUM (N. C.).—Shift your plant into a size larger pot and keep in a cool house until the middle of April or early in May, when plant out where required.

CULTURE OF DOCARDIAS (Idem).—Take cuttings in April, strike them in gentle heat, pot-off when rooted, and grow in frames. They may be placed outdoors in summer, but at the end of September the plants should be cut-in and potted after they have commenced growing, but they are not nearly so good as young plants.

STOPPING BEDDING CALCEOLARIAS—ZONAL PELARGONIUMS FOR WINTER FLOWERING (Idem).—Stop the Calceolarias to two joints and plant them out in 9 inches apart if the soil be poor, or 12 inches if rich. The cuttings of Geraniums should be potted singly in small pots, and stop them when they become established stopped, or if in pots stop them at once. Shift into 6-inch pots when they have made shoots an inch long after stopping, and stop again early in June. They should have after this a position outdoors upon ashes in a sheltered situation, and be placed in the blooming pots (6 or 9 inches) about the middle of July, the plants having been stopped about a week previously. In late August and early September weak liquid manure should be given twice a week; the plants should be placed under glass about the middle of September. To flower during the winter they require a temperature of 45° to 55° and abundance of light and air.

FORFONE ROSE (E. E., Wilt).—Write to Messrs. Curtis & Co., Rossby, Trowbridge, Wilt.

COCUBERS IN SMALL HOUSE (P. C.).—You ought to have sufficient heat from the flue, both for bottom and top heat; and as you do not say whether there has been any difficulty in getting up the heat, we can only conjecture as to the cause. It is very likely that the flues under the bed became too hot. It requires very little heat from a flue or hot-water pipe to heat a room, and the water in the pipes can be cooled by having a tank, in which the pigeon-holes allow part to escape to the house. Our own way is to place a good depth of bricks over the pipes for bottom heat. The internal atmosphere is heated separately from the other. We advise you to do this, and also to bring the flue into the side of the path; the one return flue, if the heat is not sufficient, will be quite sufficient for the top.

FAILURE OF CAPE IN VINERY (E. F. M.).—As your border is inside only perhaps it wants water. Could you not have the valve altered so that the heat would not pass through it? Vines must have a season of rest. A heavy crop last year would be in itself account for a partial failure this.

ROSES DAMPING (J. T. M.).—Now mature under the stage would certainly cause more moisture, which would naturally increase the evil. A dry heat is what you require, but if you cannot have this place the plants now to the glass, and admit plenty of air on all favorable occasions. If you can put in a stove it will do better. Flowers of sulphur and best way to have to get over leaf. Keep the soil in the pots moderately moist.

GREEN FLY ON STRAWBERRY PLANTS (A Constant Reader).—They are frequently attacked. Fumigate with tobacco smoke.

FORCING VINES IN POTS (Lxx).—One flow and return 9-inch pipe will be quite sufficient for bottom heat. No evaporating troughs are required on the pipes, but a bottom heat. Six feet lengths of 4-inch pipes should be fitted with troughs and water in the troughs and best way to have to get over leaf to a respectable builder, and it comes cheapest in the end.

CAROLIC ACID (H. F. F.).—As your walks have wooden edgings the carolic acid once mixed with one hundred parts of water will not injure the flowers near the edge of the beds.

WHITE TRUMPET LILY (E. G. Z.).—This is probably *Lilium longiflorum sinense*. A portrait and description is in the "Botanical Illustrator," vol. 10. It is a native of Japan. A list of the Lillians is in all the botanical dictionaries.

PRONUNCIATION (Delta).—There is no work devoted to the subject. All botanical dictionaries have the names accented.

VARIEGATED BRUSSELS SPROUTS (W. B. B.).—The specimen sent is the whitest we have ever seen, neither the head nor the side sprouts containing more than a tinge of green. For ordinary purposes we should not regard it as a variety, but as a decoration. The plants are very hardy, and grow with free growth. If healthy it would be conspicuous in shrubby borders. The plant sent appears to be in good health, but perhaps it has been "selected." Give it a further trial in order to prove its constancy and hardiness.

CLIMBER FOR VERANDA (W. P., Edge Hill).—We should plant the *Crimson Bourneville Rose Amadis* on one side, and *Madame d'Arbury* (hybrid climber) on the other, and allow them to intermix. It might be better to veranda the first year, but would do so quickly. Or you may sow *Tropaeolum canariense* and tall *Nasturtium*, which would answer until destroyed by frost.

WINES-FLOWERING CARNATIONS (Wild Rose).—You do not say what varieties are grown, but we presume the Tree Carnations. Young plants after the first year should be struck in gentle heat early in March, close until established, when they should be gradually hardened-off in a cold frame, the points of the cuttings being pinched out. After danger from frost has passed the plants should be placed outdoors on ashes in an open yet sheltered situation, all they require during summer is shifting into larger pots, stopping the shoots, but not later than the beginning of July, and duly attending to water, staking, &c., housing at the close of September; 6 and 7-inch pots are quite large enough for plants the first year. The temperature, if they are to flower during the winter with certainty, should not be less than 50° in the first half, affording plenty of light, and six airings a week, but heat of 10° to 15° or more in bright mild weather. We prefer to have a few plants in 9-inch pots which are grown on the second year the same as the first, but not allowing them to bloom, stopping them until April and not afterwards, regulating the shoots as they grow during the summer. They are peculiarly adapted for giving a fine and early display of color into the blooming pots in June. They will bloom in late summer or autumn, and continue through the winter. The best of the Tree Carnations are Princess Christian, Miss Jullife, La Belle, Princess Beatrice, Zouave, Queen of the Belgians, Marchioness of Westminster, Annie Williams, Empress of Germany, Monsieur Zola, and La Grenadier, and what is the latest named, Pieter de Malmaison, Prince of Orange, and Grandia.

ACHIMENES CULTURE (P. F. S.).—When the plants have grown about an inch above the soil, or between that and 2 inches, they should be lifted carefully, preserving the roots to each, and be planted in pans, commencing at the sides, placing them 2 or 3 inches apart, and six airings a week.

The plants are to be 4 inches in depth and 15 inches in diameter. We drain them about 14 inch deep and place an inch of the roughest of the compost over the drainage. The plants are inserted about an inch deeper than they were before, and we have the soil next the rims of the pans about half an inch below them, and rising slightly to the centre. The plants are grown near the glass in a house or pit having a temperature of 65° to 60° at night, and 70° to 75° by day, with a rise from sun to heat to 80°, admitting air freely and maintaining a moist atmosphere. We top-dress the pans when the plants are a few inches high with rich compost just on the surface, or cow-dung well-decayed, mixed with equal parts of loam and sand, answered well. The compost used consists of equal parts of light turfy loam, sandy peat, and leaf soil, with a half part of old cow dung or well-decayed manure and silver sand, thoroughly mixed but not sifted. Water is applied carefully, not allowing the plants to become very dry, but giving a little water to the roots by top-dressing applications. Some growers stop the plants when 3 or 4 inches high, but instead we put in light green stakes at that time, and endeavour to form the plants by the disposition of the stakes into a half ball, regulating as its growth proceeds, and as they branch from the bottom small shoots are left. For filling in vacant spaces, liquid manure is given, and the plants are watered after the plants are growing freely. When in flower they are the better of slight shade and a lower temperature. There are few finer objects than a well-trained and bloomed pan of these plants.

HARDY ANNUALS FOR POT FLOWERS (John Jones, Sower).—The best six hardy annuals for cutting are Sweet William, *Chrysanthemum carinatum* Donnetti flore-pleno, Sweet Sultan (purple), *Hebeida odorata* var. Queen Victoria, and King of Tom Thumb Scarlet *Nasturtium*. Having no heat no hardy biennials, unless you procure plants, will flower this year. Six are—*Campylosiphium*, *Dialycanthemum*, *Dolicholobum*, *Androsace*, *D. grandiflorum* celestinum, *D. distichum*, and *Androsace* flore-pleno. Scarious double dwarf, and Sweet William, Anriens-eyed (Bragg's). The best six out of the two sections are distinguished by asterisks.

PEAS FOR EXHIBITION (Idem).—In addition to Commander-in-Chief (Carter's), Supplianter (Laxton) is good, being fine pods.

WIREWORK FOR VINE BORDER (E. P., Leicester).—If you are certain that wirework is greatly abused in the soil we advise you to remove it as soon as possible. If you only suspect their presence, or if there are only a few of them in the soil, they will not do serious injury, and you might trap them by burying Potatoes and Carrots, examining them periodically. The best traps

PAPERS, J. C. Lamarcraft. TERMS.—1, F. Hodding, & T. Homes. FAN TALK.—1, C. Parsons, 2, J. F. Loveridge, JACOBINA.—1 and 2, J. Andrews, TRUMPETERS.—1, P. R. Spencer, 2, C. J. Woodford. ANY OTHER VARIETY.—1 C. Parsons. SELLING CLASS.—1, C. Howard, 2, R. T. Harris, 3, J. Chandler.

SQUIRRELS—HEDGEHOGS—BULLFINCHES.

I have read with interest the articles of J. Gadd and "AN OLD GARDENING BOY" upon "Squirrels as Depredators" in our Journal of February 22nd, and I have waited to see whether more letters would follow, but as no more have appeared I now claim the right for a reply. My garden friends must allow me to say that all mice, rats, and the most predacious and class dislikes. They do sometimes rise to simple hatreds. The disks of some gardeners to birds and animals may be classed among them.

My aim is truth, apart from sentiment on the one hand and unreasoning destruction on the other; also I am always, I hope, open to conviction. That there must be a balance preserved throughout nature is, I am sure, necessary. In England as to smaller birds that balance has been upset by the destruction of the hawk tribe by gamekeepers. They are the only men who are allowed always to carry a gun. The carrying of swords by gentlemen in the last century had to be put down by law because of the destruction to human life caused by men going about armed, and I wish something of the sort could be done as to the keepers' guns. The men "get out of bed the wrong side," or the chimney smoke, or the village school, or the master is angry, or last night's best lingers in the head; the armed keeper avenges himself by shooting every bird he sees and every squirrel on a beech tree. If every man in England carried every day a loaded gun I believe murders would abound all over the country.

Take now the squirrel. I have lived twenty years with them around me, and have suffered no harm? Why? Because there are millions upon millions of beech nuts in the shrubbery upon which the animals feed. Under quite altered conditions I would not advise the over-preservation of squirrels, though indeed they never abound save where the beech mast is plentiful. Keep a tame squirrel, let him out into your garden where there are no beech trees, and he will find his way to the peaches, &c. I ensure strongly indiscriminate slaughter of that mischievous animal the squirrel. Then I am sure they are constantly blamed by the dishonest. A hedge gardener who was proved to be dishonest, and confessed his dishonesty at last—he was in the habit of sending his master's fruit to the large city near, and being questioned as to the scarcity of the fruit he always pleaded as an excuse the squirrels. Another man, dismissed for the same reason, did the same. Masters and mistresses who read this paper—and many do—I appeal to you against total destruction of squirrels where there is beech mast for them, and where there are no plantations of small firs, the young ends of which I have said they nibble off.

Again I ask that when it is necessary that these animals be destroyed that no traps be used, at least unless they be of a kind to catch them alive and uninjured, when the trap can be plunged into water and animal drowned. It is better, however, to shoot them: a nice occupation for master himself, by the way, who will only kill a limited number, for I have known gardeners who set a gun for shooting waste their time—I mean their master's—hour after hour walking about with a gun. Stopping and working make the back ache, walking with gun on shoulder is no work at all.

I notice in last week's Journal that my words extracted from the French ministerial order are questioned as to harmlessness of hedgehogs. These poor animals have suffered terribly from class hatreds. The cowman declared they sucked the cows—a thing impossible because their mouths were too small, but it was sufficient for a dishonest cowman to make his master believe this nonsense. Then the gardeners in old times used to declare that the hedgehogs rolled themselves on the fruit and walked away with them on their spines; but in truth their spines are so arranged by nature that no fruit will stick on them if the experiment be tried. The poor hedgehog was perfectly free of blame in both cases. Its usual food is beetles, worms, slugs and snails, also frogs, mice, and even snakes. Occasionally it is said to eat eggs, and this is the point urged by "AN OLD SUBSCRIBER." I am surprised to hear, however, that the hedgehog can eat any than a small egg. What, however, is truly said by "AN OLD SUBSCRIBER" of the hedgehog may be said of birds and squirrels, "they require keeping in bounds;" but I think the actual usefulness of the hedgehog very greatly exceeds his powers or habits of injury, and it nowhere is very abundant.

Returning to the squirrel. There was a custom in some parts of England for the riff raff of each village, the idle men and boys, and, worse than either, the hobbdehoyes, to go out in the woods and plantations every St. Andrew's day, November 30th, armed with sticks and weapons to hunt squirrels. A number of these they maimed, bruised, wounded, and killed; but the real object was to prevent the killing of nuts, to pick at or get hold of game and rabbits, to bark hedges and plantations and get firewood. The day ended by a sapper at the public house, at which the game and rabbits were eaten, and the land-

lord benefited much by the quantity of beer drunk. The poor squirrel has had a bad time of it—blamed wrongly, tortured, and put forward as a pestence. Its beauty, grace of limb and action, appealed all in vain to the cruel.

I now turn to the subject of the bullfinch, and I am sorry to say I have not a single good word to say for him. Naturally and untaught he has no song. Unlike the chaffinch or the goldfinch (would that the birdcatchers had not almost exterminated them), or the linnet, he never cheers us with his song—he never makes the garden joyous with music. His habits are shy, and repelling, and unsocial. He lives almost all the year in the woods. His colours are handsome, though rather gaudy perhaps, but his shape is as unpleasing as a bulldog's. He remains far from man's dwelling except in the very early spring or late winter, and he then comes a destroyer. Unfortunately bullfinches are on the increase. They do not pay to catch, for they cannot sing and cannot be taught to sing, except when taken from the nest or in their brown nesting feathers. And then there are no hawks to kill them (oh, those keepers!) So unto our gardens they come in February, and first begin in the Gooseberry buds. In a very few minutes all except on the extreme ends of the shoots are picked out and eaten. Then next they attack currant buds and then the plum buds, and they are eaten—nothing left but little empty cups all up the branches of gooseberry, currant, and plum tree, and so the crop is gone. This mild winter they have been unusually destructive to the gardens around; rather strange that the other berries of the hedges. I must pronounce a sentence of death upon the bullfinch. I hold not to sentiment but reason. Apparently little care was taken to provide this mild winter against the depredations of the bullfinch, and hence most gardens have suffered.

The best plan in regard to gooseberry bushes, especially those of upright growth (with which only the plan can be well carried out), is early in the winter to tie them close up with a withy or a bit of wild clematis or tar string; bend their branches together in a mass; and though the birds will eat the outer buds they cannot get in to eat the inner. When the leaflets come out untie the trees, for it is only the buds as buds that are cared for. Another plan is to get some balls of the thin twine—a loose, very thin, flossy, yet strong string used by saddlers (it is very cheap), catch it on the branches, crossing and recrossing. Mr. Bully thinks it a net, and, like all thieves, objects to be caught. White-wash, too, they do not like. Shavings and little flying flags or paper Mr. Bully is up to. They might have frightened his great-great-great-great-grandmother when she was young, but these are days of enlightenment and school boards. Bullfinches must be shot down or killed in some humane manner, they are no good, they do only harm. I am sorry to have to write this, but a useless thief, though he wears a velvet cap and a red waistcoat, must be got rid of. Germany will always supply us with the best piping birds, and in her forests the stock of birds is inexhaustible, and a good trade is made by the German bird-traders.

In conclusion I would say, Do not allow the squirrel to be exterminated, but keep him where his natural supply of food is provided. Do not exterminate the hedgehog, for his usefulness is greater than his power of injury. But do if you can thin-down with no sparing hand the Bullfinch, for he is only to a degree ornamental; he is not useful, and is a very injurious bird.—WILTSHIRE RECTOR.

THE CRYSTAL PALACE BIRD SHOW.

(Continued.)

The awards in the four Lizard classes were disposed of to birds of Gold and Silver-spangled stamp, pure and simple, without any regard being paid to the pedantic and fatuous notions of "pencilled" or "semi-pencilled" birds. To attempt to establish classes for Lizards otherwise than "spangled" birds would be an attempt at hair-splitting, anything but wise and advantageous to the Lizard Canary fancy. The idea, evidently, is a *fool* one, and about on a par with that which occurred some years ago when an attempt was made to introduce "blue" Lizards, which are as unlikely as a blue dahlia. It is a treat to us, and one we never become satiated with, looking (not in the way of a mere glance) at the Lizards. Class 20 commenced the lot, and we could not think otherwise than that the first prize bird (630, Ritchie) was a bouncing specimen in all points—a decided win over the others in the class. The competition rested now with Nos. 616, second (Salt); 629, third (Reid); and 627, fourth (Reid). No. 633 (Fairbrass) would have led forward place, to judge from appearance, but the foul feather which did appear in the shoulders, and which must have been the means of lowering its flag. The class numbered twenty-six, and was a tolerably good one, excepting here and there of a bird or two being poor. Of the two dozen Silvers Mr. Bunting landed a clever first in fine condition, a decided win, although it must have run a dogged race with Mr. Fairbrass's second (658), Mr. Salt's third, and Mr. Ritchie's equal

third, betwixt which there was not much choice for places. In Classes 22 and 23 Mr. Fairbrass was cock of the walk, taking first in "broken" Golden, and first, second, extra second, and third in "broken" Silver, the other prizes being disposed of to Mr. Salt's 685 (second), which we thought good enough for a first; and Mr. Russell's 687 (third), cheaply sold for £15. 15s., although there were other birds in the class we preferred. Sixty-three Yorkshires were entered, of which number Mr. Thackrey was the winner of three firsts, two seconds, and two thirds out of his twenty-three entered, whilst Messrs. Wilkinson and Holroyd won a first and second, and Mr. Belk a couple of thirds, all fine birds of their respective breeds. In the high-coloured Cinnamon Mr. Pope of Brighton must have felt happy in winning first in Yellow and first in Buff with two such splendid birds, which, we believe, were quickly claimed at £2 12s. 6d. each by Messrs. J. & W. Waller of Finsbury, the noted breeders of the London Fancy and Cinnamon birds. Although the noted Coventry breeder of Cinnamons (Adams) was knocked back a peg, still his Buffs were all there for colour, quality, and condition, and were awarded second, third, and extra third. We must not omit mentioning Mr. Munnes' second Yellow, Mr. Athersnot's third (another noted Coventry breeder and exhibitor), and Mr. Pope's extra third. Mr. Salt's (794) extra second and Mr. Caplin's (806) third prize both did credit to their respective owners. The Cinnamon (not of high colour) in the next two classes bore a more modest appearance compared to their high-coloured compeers in the previous two classes, and were to make choice of birds for breeding purposes we would rather choose those not peppered. Class 30 commenced the Yellows, and Mackley Bros., who headed the list, chalked first and third, Mr. Irons of Northampton being second with a fine-feathered bird. We are always pleased to hear of new exhibitors entering the competing arena, and we were such in the case with Mr. Kinderman of Putney, who won first honours in Class 31 with a fair bird, exceeding cheap at the catalogue price of £1, although we preferred Mr. Smith's second-prize bird.

Time pressing somewhat close upon us, and having a wish to devote a little attention to the Mules, we passed hurriedly over Classes 32 and 33, both numerously represented with birds of a varied kind. We could not help noticing that in the latter class there were birds present which had no claim to a position, owing to the stipulation that the class was "for other varieties of Canary not previously specified." This was not adhered to; but we are not going to condemn entry 912, which stated the bird to be "twice crossed, three-quarter London Fancy and remainder Lizard!" A little of the Darwinian study here evidently. After leaving cage 922, a "wild Canary from St. Helena, a capital songster" (no doubt in our absence)—we came into immediate contact with the Mules. We were not carried away with surprise with the eleven entries in Class 34, Evenly-marked Yellow Goldfinch Mule. Mr. Doel of Plymouth headed the class—his old place—the first-prize ticket being attached to cage 923, containing a seven-months-old bird, valued at £100! We have seen better Yellows shown by Mr. Doel, notably a couple of beauties about five years back. As to condition the bird was all there, and was well backed-up with two other specimens for second and extra third places. Mr. G. Russell's equal second was sent in exhibition form, and Mr. Salt's third Yellow would have shown to greater advantage had it been in better condition. Mr. John Brown, a well known Mule exhibitor hailing from Penrith, gained a very deserving extra third prize with a good-conditioned bird. The Even-marked Buff class contained seventeen entries, the first-prize bird, exhibited by Mr. Doel, being the very best Even-marked Buff we ever saw, and that is saying a great deal. Its general style, condition, and plumage was really superb. The same exhibitor also took second and third with birds in the pink of condition and plumage. Two equal seconds were awarded, one to Mr. Steven's bird, No. 946, a fine six-marked specimen, which, however, had one dark feather, the side of its tail slightly broken; the other to Mr. Salt's 941, which at first sight appeared very attractive, but which had a feather in its right wing misplaced, and appeared somewhat discoloured for the dark feathers up the left shoulder. 939 (Salt), a fair bird, lacking somewhat in dash and general style. The class, however, was one of the best in the show. Classes 36 (Unevenly-marked Yellow) and 37 (Unevenly-marked Buff) were fairly represented, the latter especially with twenty-nine birds. Here again Mr. Doel was the chief winner, taking first, second, and third honours with extra showy Yellows, Mr. Russell again coming in for a very capital extra second, and Mr. Willsher for an extra third. In the Buffs out of seven Mules exhibited Mr. Doel gained the premier place besides second, third, and an extra third, three others being very highly commended. An extra second was also given to a splendid bird belonging to Mr. Salt, and a similar mark of distinction to Mr. Luke Belk's bird. Two special prizes were given to the class to two beautiful Mules full of quality, which, no doubt were worthy of the prizes considering that the breeding of such choice specimens are of so rare an occurrence, the owners of the birds being Mr. C. J.

Salt, Burton, and Mr. Brown, Penrith. Classes 38 and 39, Dark Mules, Yellow.—Mr. Salt was the winner of the three prizes, whilst Mr. Bexon was awarded first position in Buffs, a mistake certainly, the second-prize bird belonging to Messrs. Cox and Griffin being vastly superior. Classes 40 and 41.—The prizes in the former, as usual, were disposed of thus: first and third to Mr. Stevens, and second to Mr. Spence, both noted north-of-England exhibitors. Of their kind the birds were particularly choice. In the latter class (Dark Linnet Mules) the north again triumphed over other parts, Mr. Tenniswood of Middlesbrough being first and Mr. Stevens of the same town second. There were some very good cages of six in Norwich, Lizards, and Mules, the chief prizetakers being Messrs. Mackley Bros., Fairbrass, and J. A. Sleep of London. The Lancashire Copy and Plain-head class filled very well, but several of the entries failed to put in appearance, owing to some unfortunate mistake occurring in the non-delivery of the labels, which we were assured were posted at the same time as others. Mackley Bros., Wright & Smethurst, Salt, and Thackrey were the prizewinners. Class 47, Scotch Fancy, numbered fourteen entries, which was good considering the distance for the birds to travel. The first prize was won by Mr. Thorpe, Dumfriess; second by Mr. Thirkettle, Norwich; and third by Mr. Mauchan, Dumbarton.—A VISITOR TO THE SHOW.

APIARIAN OUTLOOK.

No more promising season than the present for poplons hives and early and strong swarms has been known in our part of the country for many years. Spring is upon us in the middle of February. A week ago I gathered a blackthorn blossom, and saw laurels in full bloom besides hosts of spring flowers of many varieties. Never have I known such a splendid bloom of laurustinus, scenting the air far and near with its peculiar fragrance, while a hedge of Berberis Darwinii has been out in blossom for some time, and its sister Berberis of Japan is overblown, and B. aquifolia fast developing. Meanwhile my hives have been hard at work pollen-gathering for full a fortnight, with a rapidly rising temperature. Not only so, fresh gathered honey is seen in two or three hives glistening—a cheering sight to the beeowner. I presume it must be gathered from the laurustinus, of which we have a large quantity, while other flowers are now scarce in like abundance, not even the golden rod, from which bees gather such quantities of pollen, and their richest honey supplies in most springs, although I see its cheerful golden cups peering out of the grass in all directions.

What is to happen no one can tell, but it seems hardly probable we can see winter again with frost or snow, although a long continuance of northern and eastern blasts is fairly due to us. Nor is an early spring necessarily followed by an abundant honey harvest. Still there is good hope, and I now write to encourage all our apiarian friends to spare no pains to give their bees every chance and opportunity of success.

It is, bear in mind, of the first importance to encourage the growth of a large population. To this end three things are of essential importance—warmth, food, and breeding space. To these must be added shelter from the driving winds. Wrap-up well; supply diligently a gentle and continuous administration of syrup with a dash of brandy in it; enlarge the entrance, but very gradually, and only as such enlarged room for exit is required; and do not fail to increase the breeding space in your hives by adding ekes as time goes on. These can be removed in the autumn after the honey season is over, and the hives reduced in dimensions for the winter; but in April and May every encouragement should be given the queen to lay, and the bees to rear the largest possible quantity of brood. Swarming, perhaps, will be delayed a week or two, but the swarms will be larger and the honey harvest greatly increased as well in the swarms as in the parent hives. Simultaneously, too, with the increase of space by means of ekes below, supers above the hives should be given as the population grows and the weather improves. If this is carefully and judiciously done there will be little complaint of the queens breeding in the supers. They do so simply because they are cramped and confined below.

I am not an advocate for wintering bees in large hives. They suffer more from cold, while they are not exempt from illness common to bees, such even as dysentery; but by all means let them be as expansive in spring and summer time as the need of the bees requires. The ekes added below should be from 2 to 3 or 4 inches deep, of straw or wood according to the pleasure of the bee-keeper. A second may be added as the first is filled. Comb-making will commence downwards by elongation of the overhauling combs, as early and as rapidly as the strength of the population permits and the exigencies of the queen demand. Perhaps the beginning of April is soon enough to commence eking ordinary hives in ordinary years. Exceptional cases of season and strength of stock will be met at the bee-master's discretion.

As to feeding, there may be instances of poorly supplied hives; if so, they ought to be fed more liberally henceforth

for the amount of food consumed while breeding is going on and as the population increases is enormous; and although honey is collected from the early spring flowers in considerable quantities, there will often be weeks during the prevalence of dry parching winds when nothing will be gathered. Therefore, let every bee-keeper be careful to watch his hives and test the amount of food stored-up within each stock as he shall be able to do so. Here it is that the common straw hives are so defective. No one can tell properly their condition, as it is impossible to see anything of their stores. Nor will weighing the hives be of much use, for the young brood in the cells is often very heavy.

Mr. Pettigrew's advice in a recent number of this Journal (page 130), is worth attending to. I am happy to be able to endorse it to the full.—B. & W.

DO BEES EAT POLLEN?

WHILE on a visit to an enthusiastic apiarian a short time ago he took at his beehouse some modern works on bees for me to look at. On opening Mr. Frank Cheshire's little work the following sentence met my eye:—"Mr. Pettigrew, whose practice is more accurate than his philosophy, tells us that 'bees do not eat pollen; they die of starvation with a superabundance of it in their hives.'" "But the latter fact," says Mr. Cheshire, "does not prove the former. A man would die of starvation if fed only on Liebig's extract of meat on the one hand, or on sarracenia on the other; but by uniting the two he has a sufficient diet. So with the bee. With pollen only they would quickly die of cold; with honey alone tissue is soon exhausted, and vital energy slowly but surely extinguished." The physiologist perfectly understands this matter, and has shown by analysis that a true proportion of the essential food of animals—flesh and heat forms—is necessary, in order that the largest results may be obtained by any given consumption of them." (page 61.)

It will be observed that Mr. Cheshire has not attempted to support his statement by the evidence of facts. His reference to the well-known physiological fact that heat and flesh are produced in animals from different principles, does not prove that honey does not contain everything necessary for the health of bees. We know that bees can work well and live a long time without pollen. At the present time I have twenty-two hives, strong in bees and healthy in every respect, that have not a particle of pollen in them, and not a bee in these twenty-two hives has tasted pollen for the last three or four months. Mr. Cheshire may wish to build up a verbal argument on this point, but they will not outweigh this simple single fact. "Accurate philosophy" is generally on the side of facts; and this I believe Mr. Cheshire will readily admit, for he is an honest writer and means well.

Swarms, on being placed in empty hives, do not gather pollen for some time, though they work hard. In about three days of fine weather, or when some combs are formed, a few bees begin to carry in pollen, which, I believe, is used for nursing purposes only. Bee-bread (or pollen) and water are used in rearing brood, but I have never known adult bees use them on their own tables. I am not aware that anybody can prove that bees eat pollen. Many a time have I given bees honey slightly mixed with pollen; they invariably took the honey and left the pollen in the vessels. Bees have the power of straining or filtering out pure honey from a nasty mixture of honey and pollen. I have referred to twenty-two hives in my garden which have not a particle of pollen in them. I could undertake to put one or more of these hives into a dark cellar, and there keep the bees in perfect health and strength on either honey or sugar-syrup alone till they die of old age. I hold that honey and sugar contain both the heating and flesh-sustaining elements, and that pollen is not eaten by bees or necessary for their health. No man is better able to place his experience before us in an intelligible form than Mr. Frank Cheshire, and if he possesses facts on the question disputed, and is thus able to establish the "accuracy of his philosophy," no one will be more pleased to see them than his sincere friend.—A. PETTGREW.

STEWARTON VERSUS STRAW HIVES.

Your correspondent "W. J. C." asks "How are we to understand that the Stewarton stock was in such excellent condition, while that of the straw skep was at starvation point?" I reply, It is very easily understood when it is taken into account that the Stewarton was the best kind of hive, offering greater facilities for its intended purpose and for storing honey than the straw. In Mr. Lowe's succeeding contribution he used the information I had furnished him and "W. J. C." against me, that the two hives were not on a par to effect equal results, forgetting all the while he was handling a two-edged sword. If they were so, where was his equality theory? I can assure "W. J. C." he will find it much more difficult to understand that all kinds of hives, whatever be their "form, material, and construction," occupy a perfect equality or common level than he will that

the Stewarton is superior to the straw. He never will find perfect equality of results from a variety of bee domiciles, although he search for it, as he did in his last letter, even up a chimney flue. One chimney over another may be so constructed as to possess a greater back-draught and effect the result as to quantity, and deteriorate the quality by sooting in proportion.

"W. J. C." uses a rather strong expression as to my competitive test hives, that after "being greatly puzzled by your correspondent's statement. . . . I cannot see it possible." To this it is replied I only stated facts. The honey harvest from both stocks was carefully weighed to an ounce; the condition of both after being witnessed was substantiated by two most experienced and credible witnesses, and I fail to perceive that the admission of facts is to be held responsible to reconcile such with the notions of every reader.

"W. J. C." further says, "Your correspondent seems singularly unfortunate in the shape and working of his skeps. . . . and that too in a very bungling manner." Before these lines appear in print his mind will probably be relieved to find the competitive straw has found its proper level and is otherwise peopled. Instead of that straw being wrought in a "bungling manner," it was far the best-managed stock in my apiary. The clear proof of this was the thoroughness with which the honey was diverted to the glass, and the weight and beauty of that glass placed it above its competitors.

This correspondent narrows some particulars of a visit he paid to the late Mr. Woodbury, and reports the gist of a conversation that passed between them, which I must confess both puzzled and surprised me as well as many a reader. Although I never had the good fortune to meet that gentleman, yet he corresponded very frequently for several years. Every letter he wrote me I have carefully preserved; he presented me with a copy of his treatise, "Bees and Bee-keeping," consequently the great apiarian "being dead yet speaketh." It would therefore be deeply interesting to the present writer as well as every British bee-keeper could your correspondent fix the date of his visit to Mount Radford, so as to place on record the time our respected chief changed his opinion as to his much-prized Italians. If early, as the price of the stock would indicate, then I think it can be easily shown he very materially changed his view as to the value of the yellow-jacket. Our respected father, like all of us who sit at the feet of that good dame Experience, never adopted "fixity" as a part of his creed.

As mentioned above, it is at all times most interesting to the bee-keeper the many odd cronies our little favourites take up their quarters in, not so much so, I daresay, from choice as necessity, when overlooked at swarming time by careless owners. In Bible lands "honey from the rock" is the rule, we have the "bee tree" of America, and the still commoner roof colonies of our own country. The first stock the writer could claim as his very own he found well combed, quite open, on the under side of a branch of an Ash tree, and the clergyman's lady referred to in remarks on "Grude Honey" only experience as a bee-mistress was with a stock she discovered ensconced in a high wooden-covered pen well placed in a raised corner of her manse garden.—A. RENFREW'S BEE-KEEPER.

[We can only spare space for facts and fair arguments.—Eds.]

HIVES.

It is astonishing how much is expected of our little friend the busy bee. The people who begin bee-keeping and throw it up in disgust after a year or two's experience are very many, for the simple reason that they think it only necessary to obtain the bees and honey, and increase must of necessity follow without any further trouble. This idea is not confined to the uneducated. Many instances have come to my knowledge where ladies and gentlemen of position, who have in the first instance spared no expense in hives and bees, have yet failed to see the necessity of a little after-attention; indeed, oftentimes they have been too timid to touch the bees or remove the crownboard of the hive. With such people frame hives, sectional supers, and extractors are quite thrown away, and straw skeps are the only hives they are equal to manage.

Then, again, many persons who are successful enough to derive a moderate profit from their bees are discontented because they cannot obtain supers approaching the size and quality exhibited at our shows, forgetting that these are generally very exceptional results, seldom obtained without the expenditure of great care and skillful management. A man may keep bees for years, manage them well, and yet not obtain a super of 80 lbs. or 100 lbs., or such a harvest from one hive as recorded by "A RENFREW'S BEE-KEEPER." It is true I could name perhaps half a dozen gentlemen who are almost sure to come to the front with prize supers. This may partly be ascribed to locality and skill. Huge supers I have long ago discovered and pronounced a mistake. It is true, if perfectly full and all the dangers of transit to the show are safely passed, a prize may be won, but the winning super is unsalable. No private person wants to

buy 100 lbs. of honeycomb, and no dealer cares to "cut and come again" at such an endless messy job. The smaller the super the more easy is it to sell, and hence the great value of sectional supers which I have and believe will soon come into general use. Each section should not cost more than 2d. if bought, and need not cost 1d. if home-made. At those prices the super can be given or sold with the honey, as is a tin canister with many of our grocery stores. The prices I have named are not imaginary, for sectional supers as good as can be desired are actually made and sold by one of our best hive makers at 2s. 6d. the set of sixteen. Clean delicate honeycomb in the houses of the wealthy is appreciated as a breakfast luxury, and one of these little supers can be consumed while fresh, whereas a very large one becomes nauseating by its repeated appearance.

I am glad to see our old contributor, "A RENFREWSHIRE BEE KEEPER," once more to the front as a frequent correspondent of the Journal, and greatly admire his gallant advocacy of his favourite system, the Stewarton. I cordially agree with him that the test, *skip versus frame*, was fairly conducted, and as fairly won by the frame; but I cannot help thinking that had our friend bestowed equal care and skill on a Woodbury hive the result would have been a little different; I mean the result was arrived at not by any particular charm of the Stewarton system, but by the greater facilities afforded by a frame hive with means of expansion against a closed straw skip.

I have not entered into the renewed "battle of the hives," as I think enough has been said. The only two charges that have been retained against frame hives are—first the expense, and secondly the damp internally. The latter is remedied by proper ventilation; the former does not exist. It is true that in frame hives there is more scope to spend money. One man will not object to pay guineas, while another will look twice before he parts with his shillings, and the latter man with good management will obtain a hive for his smaller coin capable of affording the bees equal facilities for the storage of their harvest as the most expensive. In like manner busy brains have invented scores of appliances more or less handy to the bee-master; but very few of these are necessities—merely luxuries, such as we can either make or do without. A handy man who can use a hammer, plane, and saw may make a serviceable two-story hive with legs and roof for 5s. or 6s., less than half this if he has the wood. I have several hives in use, the result of a morning's work and the materials of an old wine case. Doubtless a carpenter would laugh at my work, but the bees don't. I know from the many letters I receive that there is many a working man would like to start a frame hive if he knew how or had the means; to such let the above be encouragement. —JOHN HICETER.

The unusual warmth on the 10th of February tempted me for the first time since October to overhaul one of my Stewarton hives. The family consisted of two lots of black bees, which were driven out of straw skeps last autumn and were subsequently supplied with an imported Italian queen. I found the interior of the hive in excellent condition, free from the slightest trace of damp, and the queen apparently in good laying order. The three central combs contained a considerable quantity of sealed and unsealed brood, and recently hatched bees were running over the combs, clearly proving that breeding had been going on in January.

In reply to some observations by Mr. Pottigrew upon the subject of ventilation I may remark that I have found the quilt, when properly used, a perfect remedy against internal moisture, and, after employing wooden and straw frame hives for many years side by side, have not found the latter possess any advantage over the former on the score of dryness.

To prepare my Stewartons for their winter campaign I remove all the slides, and insert the little plugs or stops between the ends of the bars. A piece of Brussels carpet cut to fit the top of the hive is then carefully drawn over the bars and secured in its position by a few small tacks. No hammer is requisite, as the tacks are easily pressed down into the soft wood with the handle of a trowel or any piece of hard wood with very little disturbance to the bees. Two or three pieces of old carpet or flannel are then laid over the wire, large enough to overlap 3 or 4 inches on either side and tacked down between the hive and its exterior cover. My hives are all in the open garden, each upon a separate stand, protected from the weather by a loose outer cover with a sloping roof. As the roof is loose with plenty of space between it and the top of the hive, and as there is an interval of an inch on all sides between the cover and the hive, perfect external ventilation is secured, and any vapour arising from the interior is at once carried off into the open air without condensation; in fact the interior of the hive is well aired and kept dry by the bees. In proof of this the iron tacks (not tinned) which have secured the pieces of carpet over my hives since October are still perfectly clean and free from rust. —J. E. BAISCOE, Abington, Wolverhampton.

OUR LETTER BOX.

CHEEKERS STAGGERING (S. C. James).—They are over-fed. There is a pressure of blood on the brain.

FEEDING FOWLS (E. C. N.).—The ground food is more nourishing than whole corn. If you want a proof of it you will find that while a bird fed on ground food will put on fat daily, one fed on whole corn will alter very little in condition. The support you speak of is not required during the night. The bird is entirely at rest, and there is no demand either on its strength or digestive powers. If there were we should think we were enabling the bird to meet it more effectually by giving ground than by giving whole corn. We do not like your feeding, and fancy you will have fowls dying of fat. All the subtleties for natural feeding are mistakes, and most of them lay the foundation of disease. We keep thousands and have done so for years, and after trying all description of food are so satisfied that we have chosen the right and proper method, that if anyone would give us any other food we would not accept it. Barleycorn or ground oats morning and evening, corn at mid-day, or any other food, such as kitchen-waste, whole maize or barley. We have always found ground maize to be unappetising to fowls, but when they took to it they put on fat very quickly and to an injurious extent. Ground buckwheat is also very fattening and unfit for feeding. Wheat flour is also a bad thing. Your birds are laying very well. You will probably have plenty of broody hens before long. We advise you strongly to alter your dietary for our plain living. Do not overfeed; you will save in every way by being moderate. Half the fowls are spoiled by overfeeding, and nothing tends more than that to give a fixed quantity of food. Feed them as long as they will run after it and no longer.

BOOK ON BEES (Neophyte).—We do not think you will find a book better suited for your purpose than our "Bee-keeping for the Many" which you can procure from this office for 5d. by post. Perhaps "Profitable Bee-keeping" would meet your wishes, by the Rev. F. V. M. Pilleul, price 6d., which you can procure of any bookseller. It is published by the Society for Promoting Christian Knowledge. Feed now. Let the sun shine on the hives now, but not in summer.

BEES DEAD IN THE COME (W. F. Mulcaster).—No inexperienced person could see the dead bees in the cells as yours are without fearing that they would vitiate the combs and be hurtful for a fresh swarm introduced to them. On the confines of starvation bees naturally give the last sip of honey to their queen, and then bury themselves 3-diply in the empty cells of their combs. In this way they seal their own fate, and the queen, if the hive has been kept dry since the death of the bees they will be easily removed by a fresh swarm and cast out of the hive, or you may remove the greater part of them by a knitting needle. If the combs are otherwise clean and good you have nothing to fear.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.

Lat. 51° 34' N.; Long. 0° 8' W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.				Rain.		
	Bar. at Sea Level.	Hygrometer.	Direction of Wind.	Force of Surface Wind.	Shade Temperature.	Temperature on grass.			
	Dry.	Wet.		Scale of 100.	Max.	Min.	On grass.		
We. 7	29.40	87.4	N.	89.6	42.6	58.4	87.9	31.6	0.795
Th. 8	29.315	85.1	N.E.	89.9	41.2	53.5	84.0	29.8	—
Fri. 9	29.192	81.9	N.E.	89.8	41.2	53.5	84.0	29.8	—
Sat. 10	30.1	81.9	S.W.	89.8	38.2	52.6	67.1	81.7	—
Sun. 11	30.216	83.9	S.W.	85.0	36.8	55.0	67.7	28.0	—
Mon. 12	29.312	81.9	N.W.	85.0	36.8	55.0	67.7	28.0	—
Tu. 13	29.378	85.8	N.W.	85.6	53.7	89.9	79.6	86.5	0.025
Means.	29.393	87.5	81.8	87.1	45.1	62.1	71.9	28.1	0.063

REMARKS.

- 7th.—Snow and rain in early morning, gone by 9 A.M.; snow and bright sunlight at 10.30, frequent heavily in the afternoon, and with high wind at night.
- 8th.—Very dry and cold; frequent snow showers during the day, bright sunshine often following them; the flakes were very large and numerous, but it melted almost as soon as it fell.
- 9th.—Rather foggy day, but very cold all day.
- 10th.—Dull and cold, but quite fair at times, bright, but very cold.
- 11th.—Fair all day; but rather dull and very cold.
- 12th.—Damp morning; a fair but not bright day; much warmer, especially towards night.
- 13th.—Fine morning, but soon becoming dull, and then showery.
- Sharp frost on 11th and 12th, rendering the mean temperature rather lower than that of the previous week. Each of the last four weeks has been colder than its predecessor.—G. J. SYMONS.

COVENT GARDEN MARKET.—March 14.

A few good samples of Strawberries have reached us, but trade being quiet they are not reaching as much as they have done, and according to present appearances a good many may be shortly expected. Good late Grapes are coming forth and making good prices. Trade still quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0	Nectarines.....	dozen	0 6 to 0 8
Pears.....	dozen	0 0	Oranges.....	dozen	0 10 8
Cherries.....	dozen	0 0	Apples.....	dozen	0 0 0
Currants.....	1 sieve	0 0	Pears, kitchen.....	dozen	0 0 0
Black.....	1 do.	0 0	do.....	dozen	0 0 0
Figs.....	dozen	0 0	Pine Apples.....	lb.	1 0
Filets.....	lb.	0 0	Plums.....	1 sieve	0 0 0
Cobs.....	lb.	1 0	Quinces.....	bushel	0 0 0
Gooseberries.....	quart	0 0	Gooseberries.....	dozen	0 0 0
Gr. Gooseberries.....	6 lb.	0 10	Strawberries.....	oz	1 6 2
Melons.....	each	10 0	Walnuts.....	label	6 0 8
Nettles.....	each	0 0	ditto.....	10 1	2 0

WEEKLY CALENDAR.

MARCH 22—28, 1877.

Day of Month	Day of Week		Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
22	Th	Royal Society at 8.50 P.M.	50.4	34.2	42.3	6 0	6 14	9 11	2 30	0	6 56	81
23	F	Quekett (Microscopical) Club at 8 P.M.	50.5	33.0	41.7	6 57	6 16	10 26	5 24	9	6 38	82
24	S	Royal Botanic Society at 5.40 P.M.	48.5	31.7	40.1	6 55	6 18	11 53	4 3	8	6 20	83
25	Scn	Palm Sunday.	50.9	32.5	41.7	6 53	6 19	11 24	4 23	10	6 1	84
26	M	Royal Geographical Society at 8.00 P.M.	51.5	32.2	41.9	6 50	6 21	2 55	4 49	11	5 43	85
27	Th	Royal Medical and Chirurgical Society at 8.50 P.M.	53.7	34.2	43.9	6 48	6 23	4 24	5 4	12	5 24	86
28	W		53.0	34.2	43.6	6 46	6 24	5 51	5 17	13	5 6	87

From observations taken near London during forty-three years, the average day temperature of the week is 51.2°; and its night temperature 33.3°.

PRUNING AND TRAINING PLUM TREES.



OUR answer to a correspondent concerning a Plum tree reminds me that we do not often see this fruit well managed on walls where there is anything like system in training; but, on the other hand, where a tree is allowed to grow in a half-wild state by a cottage we may see fruit of medium quality produced year after year in abundance. Why is this? and is there no way of producing fruit except by following the cottagers' system?

The cottage undoubtedly has some natural advantages; its walls are warmer. A wall of any building, even if unheated, must always be warmer in winter and spring than a single garden wall, from the fact of its having a body of comparatively dry air behind it. The cottage in addition often has a projecting roof, and this, especially if thatched, is almost a perfect protector. Then, again, bullfinches do not trouble cottage walls seriously, because the birds would not be left undisturbed for any length of time; while here and in many other places they often take every unprotected fruit bud. This is part of the reason why the half-wild tree against a cottage wall produces the most abundant crops; but the other and most important part is that the mode of bearing of the Plum is not sufficiently taken into account when pruning and training are being performed, it being in this respect altogether different from the Peach or Cherry, both of which can be kept in perfect order without allowing the growth to project any further from the wall than the fruit does. But if you would have Plums in abundance you must have spurs on the trees to bear them. True, you may have a few fruits on the best-matured parts of the one-year-old wood, though not often what could be called a crop; but well-grown and matured one-year-old wood, if nailed-in to the wall and treated liberally, will seldom fail to produce abundance of fruit spurs for the following season. Spurs will of course increase in length every season; for to keep them fruitful they must generally be pruned to a wood bud, and they become offensive to the eye of the "neat" gardener, who unmercifully slashes them off without making any provision for a succession. He then wonders why his trees do not bear, and finally blames soil, situation, or anything except himself.

Now, most employers like neatness, but all like fruit, and the taste for the former carried to the extreme will often cause the latter to be a blank. Fortunately there is a happy medium which will please both the eye and the palate. Spurs and branches which have become unsightly may always with perfect impunity be cut off in August or September when there are other branches and spurs to replace them, so long as too much is not done in one season; the wounds will then heal before the tree ceases growth—an all-important point in fruit-tree culture when severe amputations have to be made.

But to begin with young trees as received from the nursery. Whatever question there may be about train-

ing other kinds of trees there is none, in my mind, about the Plum, no other mode will bear comparison with fan training. Trees as received from the nursery have from six to twelve shoots, which should be trained in equal numbers and at corresponding angles to form main branches on each side of the tree. This is the general practice, and it is a good one; but another general practice is to shorten these shoots back pretty hard, and this is not so good. If the points are soft and sappy they should be cut back to the ripe wood, and then the whole of them regulated as to length, leaving when possible the lowest branches the longest, as they have a disadvantage when competing with others more or less vertically disposed.

A little disbudbing will be necessary the first season or two. Growths will be produced on the side next the wall, which should always be carefully picked off, as well as others which are inconveniently placed; but an endeavour should be made to keep the wood covered fairly with foliage, and to attain this end growths may be often pinched back and kept as spurs when there is no room to treat them otherwise. Young growths must be laid-in every season, and some of the weakest and worst of the older shoots cut out as soon as the wall becomes fairly covered, when spurs and fruit buds will follow as a matter of course.

Our trees after they are pruned in autumn receive a dressing of limewash, with which is mixed a good quantity of soot while it is being slaked. Bullfinches do not mind the lime alone when they are used to it; but they are not partial to soot.—WILLIAM TAYLOR.

SEDUM SPECTABILE.

Now that hardy border flowers are receiving more attention than formerly, I am glad to find the above valuable plant is not overlooked. Mr. Record could not have directed attention to a plant more worthy of increase and cultivation, nor have detailed his mode of culture at a more seasonable time. I am not aware that any better mode of propagation can be advanced than that described by Mr. Record on page 198; therefore in these supplementary notes I will confine my remarks to the after-cultivation of the plant, and its adaptability to various modes of decoration.

If a Chrysanthemum is planted in a border and left undisturbed year after year it will naturally produce a multiplicity of growths and proportionally small flowers; whereas if the growths are thinned the flowers are fewer and finer; and better still, if the more robust shoots are struck and grown throughout the season in rich soil magnificent exhibition blooms are the result. In that case the power of good cultivation is forcibly exemplified; but equally striking—even more so—is the improvement resulting from intelligent and generous cultivation when applied to this Sedum. Plants which are established in borders are now pushing a large number of succulent pale green shoots: these if suffered to remain will produce puny heads of flowers of 1 to 2 inches in diameter;

if the shoots are thinned and manure is applied to the plants the flower heads will increase to 4 or 6 inches in diameter; but if the stoutest of the shoots are struck and the plants are grown thinly in rich soil, heads of flowers are produced not less than a foot to 18 inches across. It is when thus grown that the plants are so attractive.

They are effective as bedding plants for massing; as border plants for associating in mixture with other flowers; as shrubby plants for planting in lines and spaces at the front of evergreens; and as pot plants for vases, balconies, terraces, and even conservatory decoration.

As bedding plants I have never seen them grown so well or produce such an imposing effect as in the ideal garden of Drumlanrig. In that grand garden where all flowers are grown by a master in the art of cultivation none are grown finer than this *Sedum*, and no beds command more attention than those occupied wholly with this fine old hardy herbaceous plant. The surfaces of large beds as I have seen them were as level as the smoothest lawn—a sea of rosy pink without a ripple. Anyone may have beds similarly fine by adopting the same mode of culture—namely, young plants thinly planted and strongly grown in rich soil. Such plants are also valuable for mixed beds, borders, or shrubberies, and transplant freely at almost any time during the growing season—even “on a pinch” when the flowers are expanding.

At another place in the north—Archerfield—plants are grown in great excellence in pots for placing on balconies and other exposed positions. Plants in 8 and 10-inch pots with as many heads of rosy flowers are well worth the trouble of producing, and will resist the effects of sun, rain, or wind better than most plants. When thus grown the shoots require to be thinned-out, and the soil strong and rich, manure water being applied freely, the pots being plunged in an open place after the manner of growing *Chrysanthemums*. The *Sedums* require staking, so as to afford room for the expansion of the heads and to prevent them being broken by their weight during boisterous weather. Smaller plants in 5-inch pots are useful for plunging in vases and for furnishing ornamental groups in corridors or other drabty positions; also for window-sills and similar exposed places—in fact, as Mr. Record remarked, these plants “can hardly be put out of place.”

By potting a few plants early and growing them under glass they flower several weeks earlier than their natural season, which is August, September, and October. They are valuable conservatory plants at any season when well grown. Being succulent in their nature copious supplies of water are necessary to bring them to perfection.

S. spectabile variegatum is one of the most charming hardy “foliage” plants we possess, and it is worthy of a place in all gardens and greenhouses. It is constant in its variegation, and always attracts when seen in good condition.

S. spectabile purpureum has darker flowers than the species (*Fabrisia* syn. *spectabile*) and flowers somewhat later, and is a plant worth cultivating; and *S. atro-purpureum* is distinct, also attractive, by its very dark foliage and fine corymbs of purplish flowers; this and the variegated types grown together afford a fine contrast. As generally seen these *Sedums* are half-starved: cultivate them and they will amply reward by their massive heads of chastely-tinted flowers—striking without being gaudy, massive without being coarse.—J. S. P., North Britain.

A SUCCESSION OF VEGETABLES.

GREAT attention is often paid to keeping up a long succession of Grapes, Peaches, and other fruits under glass, and it is considered to be a matter of no ordinary importance to have Grapes “all the year round;” but I consider it is quite as creditable to have a good supply of vegetables of different sorts all the year round. This does not always have the attention it deserves, and even in large gardens there is often a glut of vegetables at one time and a scarcity at another. This is the result, to a great extent, of making too large a sowing and planting of a crop at one time. I have been rather fortunate in securing a lengthy succession of vegetables, which I attribute to attention in sowing the seed, and also in selecting sorts for succession.

No better time than the present could be chosen to begin arranging for a succession of vegetables all the year round. Beetroot, Parsnips, Carrots, Salsify, Scorzoneria, and Leeks need only be sown once, and these crops cannot be sown too soon now. Onions may be sown now, and again during the

last week in August or first week in September. Peas in November, the end of February, and at intervals during the next four months; French Beans, which may be sown in the open ground during April, May, June, July, and August, and under glass the remainder of the year. It is chiefly amongst Greens and salads that the easiest successions are to be found. Cabbage must be sown the first week in August, early in March, and in April and May; Cauliflower must be sown at the end of August, early in February, and at monthly intervals until July; Broccoli, which supplies the connecting all-the-year-round link with Cauliflower, must be sown during March, April, and May; Brussels Sprouts and Savoys may be sown at the same time; Parsley in March and June; Turnips from March until the end of July, when the winter crop is sown; Asparagus, Rhubarb, and Sea-kale in March; Celery in heat in March, and again in April; Cos Lettuce should be sown for summer use in March, April, May, June, and July; and the Cabbage sorts in August and September for winter and spring use; Endive from April to August. Radishes may be sown once a month all throughout the year, but in the winter time they must have the protection of a frame. The same remarks apply to Mustard and Cress. The quantity of every vegetable sown must be regulated by the demand, but whether that be large or small a sowing of everything in its season should be made every twelve or fifteen days.—A KITCHEN GARDENER.

FUCHSIA CULTURE.

FEW plants can equal Fuchsias for profusion of bloom when well grown, and few plants are easier to cultivate; still one often meets with plants falling somewhat short of that gracefulness of habit and abundance of bloom which ought to characterise a well-grown specimen. Fuchsias, like Radishes, are the better for being grown quickly, and without any extraordinary effort plants 3 feet high and as many through can be grown in one season.

Cuttings procured now, if short and strong, will soon strike in a close genial heat. The young growths should be taken off from 1 to 2 inches long and inserted in pots in which a large proportion of silver sand has been incorporated with the soil. These if placed in a propagating case or warm frame (such as a Cucumber bed at work) will root very readily, and in about a fortnight they may be potted-off into 60's, returning them to the frame again for a time, when they will soon require a second shift. This being done and the plants growing well it is time to consider about the training, some sorts forming an agreeable pyramidal shape without much stopping, while others are stronger growers and require stopping frequently to bring them into the desired shape. A pyramidal shape supported with one stout stick in the centre has the most natural appearance, though I have seen and grown them in a bush-like form; but bushes lack the gracefulness of perfectly symmetrical pyramids, the blooms hanging down over the pots so as to almost cover them.

At their second shift the plants will require to have short stakes placed to support and train the leader to, and should side shoots not form freely the leader should be stopped whenever 8 or 10 inches of growth are made; this gives strength to the side shoots and lays a good foundation for the plant. Repot whenever the roots have reached the sides of the pots, being very particular that they never become pot-bound, which is sure to throw them into bloom (of course if bloom is required in a small state it is not necessary to repot as advised). Attention must at all times through the growing period be paid to shading, watering, and keeping up a moist temperature of 50° to 65°, which suits them admirably, and in which they make most rapid growth. They will require syringing at least twice a day, and the floors and stages must be frequently damped if the weather is at all hot. I often, when they are growing well and have made plenty of roots, water them overhead with a coarse-rosed watercan—a drenching which they seem to delight in.

The soil that suits them best is equal parts of good fibry loam and leaf soil or old hotbed manure (in which a great proportion of leaves has been used in the making), and a plentiful sprinkling of coarse silver sand, the whole well mixed together; plenty of drainage must be provided, and a layer of moss over the crocks will prevent the drainage from becoming choked. Liquid manure is beneficial when the plants are growing freely; it should be given two or three times a week provided it is not very strong; weak and often is the safest plan. With this treatment Fuchsias will be found to do well and make hand-

some plants for the conservatory, in which structure, if kept tolerably well shaded during bright sunshine, they will last in bloom until very late in the autumn.

When flowering is almost past water should be partially withheld and the wood be well ripened, and be allowed a period of rest in some places where frost is excluded. While at rest the plants should be pruned hard back, and about January be introduced into a temperature of about 50°. As soon as the buds have grown nearly an inch shake all the soil from the roots, and place them in smaller-sized and clean or new pots. If it is convenient the pots can be plunged in a very mild hot-bed, which assists them to root quicker and break earlier and stronger, and, if wanted for exhibition, stopping and training as advised must be attended to. Some of the early whites, such as Rose of Castile and Arabella, can be stopped as late as eight weeks before the show, but some of the doubles will require ten and twelve weeks, and the final potting should not be made closer than three months to the show. Should some of the plants as they become old not break well from the bottom cut them down, they will then with very little attention make useful bushes for conservatory decoration. I also train some plants as standards, which form associates well with other plants employed in grouping and massing.—J. W. MOORMAN.

WROUGHT-IRON STANDARDS FOR WIRE FENCING.

We have detailed on page 160 our high opinion of this kind of fencing. Messrs. Barnard, Bishop, & Barnards have sent us the accompanying wood-cut of their anchor-footed fencing, and state that the same heights may be pierced for any number of wires without extra charge.

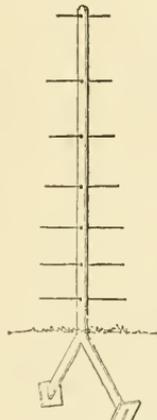


Fig. 28.

CARBOLIC ACID FOR SEEDS.

It answers admirably for both Wheat and Peas; but the mice or rooks will work the insides out of Broad Beans. A table-spoonful will dress a quart of Peas; sprinkle the dressing over them, after putting the Peas in a flower pot or basin, and stir with a label until all the Peas are covered. Three pints will dress two bushels of Wheat. It costs only 2s. 6d. per gallon. How it is mixed I know not; that I fancy will be a trade secret. Full instructions for dressing the seed are sent with the liquid, "King's patent carbolic dressing, prepared by Mr. Edmund King, Ashley, Cambridge."—J. DOUGLAS.

PROTECTING FRUIT-TREE BLOSSOMS.

NEARLY every year great damage is done to fruit trees by the severe frosts of spring. Last year spring frosts were most disastrous, and this year the blossoms are in a dangerous state. Much may be done by protection for preserving the crops on choice fruit trees on walls, and also pyramids; but orchards of course must take their chance.

I have noticed that destruction is frequently done during two or three nights. For weeks when protection is not needed it is afforded, and then when the "pinch comes" the covering is not sufficient. I allude now to permanent coverings such as nets, which occasionally first make the blossoms tender and then do not save them. When slender nets are used which exclude 4° or 5° of frost, there are almost certain to come nights of, say, 10° to 12° of frost, and then additional protection is needed to save the crops.

My opinion about the protection of fruit trees is this—The trees should not be covered at all unless absolutely needed, and then the screens should be sufficiently stout to resist 10° of frost. I have observed that the losses have been as great with trees which have been what I call half-covered during all weathers—mild as well as severe—as when other trees have not been covered at all. I will go further and say that I have known Apricot trees which have never been protected produce

better crops than others which have been screened with nets for weeks. I have no doubt but that others have noticed the same circumstance, for it is by no means uncommon.

Protection during mild weather renders the blossoms tender, and then when a rather severe frost occurs they succumb; while blossoms which have not been covered are more hardy and better resist the effects of a "nipping night."

It is self-evident that when, as is the case in some gardens, ample coverings are provided and they are judiciously used the crops are rendered safe. I mean moveable coverings of canvas or some other stout material. These are the best coverings, and the trees are well worthy of them. They are not, however, always provided, and the labour of pruning, pinching, training, and syringing, as well as wall space and root space, have been lost when frost has prevented the production of the crops.

The garden that I "look after" is only small in comparison with many others, yet it contains several wall trees and some profitable pyramids. The blossoms of these, or most of them, I have generally contrived to preserve. I have a length of herring net sufficient to cover the entire wall. That net I might place over the trees early in March and there let it remain, fondly hoping the blossoms would be safe; but knowing that such a net so used is only deceptive, I do not put it up in that fashion.

The only permanent coverings, if I may call them so, are a few bare poles. These are fixed during March, and remain until the end of May. Perhaps during that time the poles and trees are covered on twelve nights, rarely more, but frequently less, and during those nights they are covered well, at least as well as my means will permit.

As to the coverings, in the first place I must say that I have a conservatory to "look after." For this a canvas blind is provided for shading the flowers during the summer. This blind just covers the "best Peach tree" in the spring, and has always been effectual. The value of the fruit saved by this covering has been more than would pay for the canvas five times over; but still my "governor" would not buy other canvas for other trees.

After the conservatory blind comes the herring net; single it would cover the entire wall, but then it would not afford sufficient protection, so it is folded into five or six thicknesses, and covers a portion of the trees, and in that form it does its work well.

After the net come the mats (I have only a few of these), and after the mats the (and here is the advantage of being a groom) harness screen, horse rug, and other sundries. Out they come if the night is sharp and the time critical. What harm can a "night out" do such things as those? None whatever; it sweetens them and kills the moths, besides saving the fruit. But these do not cover all the trees, and then comes—straw; not straw, however, as a real gardener would use it (and here comes the advantage again of being a groom), but straw as used by the sometimes despised, sometimes valued, "horsey" man.

Have not gardeners often seen the neat fringes of straw fabricated by grooms and spread along the fronts of the stalls to make them look "trim"—a row of knots neatly made, and then a fringe of straight close straws? Well, these are first-rate "protectors." When made of "selected straws" each fringe will cover a surface of wall or tree of more than 3 feet depth. They are light, take up little room when folded, and with care they last three or four years. Three poles fixed round a pyramid Pear tree and covered with the straw fringe render the blossom of that tree safe, and the same on wall trees. Do not despise a groom; the gardener at the hall did not when he asked me to teach his men to make protectors of the same kind. The men—garden men—now make them on wet days, and they are used during frosty nights, and much fruit is saved that would be otherwise lost. If you print this I will tell you next week how I make miniature frames for raising flower seeds, &c., without infringing on anybody's patent. Mr. McSanderson, the baronet's gardener, says it is a capital idea, but not new. Old practices are sometimes as useful as new notions.—GROOM AND GARDENER.

BEAUTY OF GLAZENWOOD ROSE.

IN consequence of the Floral Committee of the Royal Horticultural Society having pronounced "Beauty of Glazenwood" to be identical with the old "Fortune's Yellow Rose," Mr. Woodthorpe, the nurseryman at Glazenwood, writes as follows:—

"I can only say I have bloomed the *Rosa* most decidedly and distinctly striped; but I have not bloomed it so well on the Manetti as on standard Briar. I will, if possible, send you some blooms during the summer."

[We can only repeat that the specimens exhibited to the Royal Horticultural Society's Floral Committee were not striped, but plain coppery yellow, and not differing from Fortune's.—Eds.]

ROYAL HORTICULTURAL SOCIETY.

MARCH 21st.

NOTWITHSTANDING that the Botanic Society's Spring Show was held on the same day, there was an excellent show in the conservatory at South Kensington. The exhibits were exceedingly choice, and well maintained the reputation of the different firms who kindly brought their collections. The principal exhibitors were Messrs. Veitch & Sons of Chelsea, Mr. Wills of Onslow Crescent, Messrs. Cutbush & Son of Highgate, Mr. Charles Turner of Slough, Mr. Aldons, Gloucester Road; Mr. Ollerhead, gardener to Sir Henry Peck, Wimbledon; Mr. E. S. Williams, Holloway; Messrs. Osborne & Sons of Fulham; and Mr. Gilbert of Burghley.

FRUIT COMMITTEE.—Henry Webb, Esq., V.P., in the chair. Mr. J. Maher, gardener to C. Allbans, Esq., Stoke Court, Slough, sent fruit of Eclipse Cucumber, for which a letter of thanks was awarded. Fruit of a Cucumber was received from Rev. J. T. Boswell from plants which have been raised from cuttings for many years, past in consequence of the fruit not producing seed. A letter of thanks was awarded. Mr. R. Gilbert of Burghley Gardens, Stamford, exhibited a collection of vegetables, consisting of very fine dishes of Seakale, Canadian Wonder Kidney Beans, Mashrooms, Hawke's Champagne Rhubarb, and Gilbert's Winter Cabbage. A cultural commendation was awarded. The last-named vegetable will be a valuable addition to the kitchen garden. Mr. J. Batters, Chilworth Manor Gardens, Romsey, sent a dish of Extra Early Vermont or Early Rose Potatoes, which were raised in 7-inch pots on the back shelf of a vinery and Fig house. The tubers were planted January 1st. A cultural commendation was awarded.

FLORAL COMMITTEE.—W. B. Callock, Esq., in the chair. Messrs. Veitch sent a grand lot of Hyacinths, Tulips, pot Roses, and Clematises. Among the former were some fine spikes of Baron Von Thyll, General Havlock, Blondin, Cavaignac, Von Schiller, Prince Albert Victor, Gigantes, Grand Blue, Garrick, King of the Blues, Lord Wellington, Masterpiece, Adeline Patti, Fabiola, Ornament of the Nature, Prince of Orange, Princess Louie, Lothair, and other double and single varieties. The Tulips from the same firm were equally well grown, and included most of the leading sorts. The *Roses*, which were much admired, included fine blooms of Princess Mary of Cambridge, Marquise de Castellane, Centifolia rosea, Mademoiselle Marie Baumann, John Stuart Mill, John Hopper, Victor Verdier, Marguerite de St. André, Madame Eugénie Verdier, Beauty of Waltham, Jules Margottin, Madame de St. Joseph, Brucine de Rothschild, and Madame Lacharme. Among Clematises, which are splendid decorative plants at this season of the year, were Lady Caroline Neville, Albert Victor, Lord Lonsborough, Miss Bateman, Lady Lonsborough, and other choice kinds. The collection occupied much space, and produced a splendid effect. A silver-gilt medal was awarded to Messrs. Veitch.

Mr. Allons's collection consisted of a very choice lot of decorative plants, including Palms, Azaleas, Spiræas, Tulips, Lily of the Valley, Cytisuses, Primulas, &c.; he likewise sent two large bouquets of choice flowers and one of *Roses*. A vote of thanks was awarded.

Mr. Ollerhead's group was made up of Azaleas, Rhododendrons, Dielytras, and some choice Orchids—*Chalcomopsis*, *Lycastis*, and *Cattleyas*, and *Odonoglossum*, including a very large variety of *Odonoglossum Roezlii* alba var. Peckii; they were in excellent condition and very effective.

Mr. Charles Turner's group contained excellent plants of Camellias, Azaleas, Hyacinths, Spiræas, and other plants, all of which were in superior condition, and were much admired.

Mr. Williams sent a fine specimen of *Imantophyllum* miniature with nearly twenty large trusses of flowers. This plant was placed at the entrance of the Show, and was particularly effective. A cultural certificate was awarded.

Mr. Wills exhibited a group of thirty varieties of his new hybrid *Dracænas*. Particularly noticeable were Gladstonii, Willisi, Leopoldii, terminalis alba, Elizabethæ, Bancsei, Victoria, Voluit, and Venusta. Mr. Wills also staged an elegant mixed collection in which the pretty halimoid of spring, *Myosotis dissitiflora*, was tastefully arranged with Lily of the Valley, and intermixed with *Isolepis*, small Ferns, and *Ficus repens*. A silver medal was awarded. Messrs. Cutbush & Son contributed a group of Hyacinths and *Eupracrias*, set-up in round baskets of about a dozen plants of each sort in each basket, and which had

a pleasing effect; and Messrs. Osborn & Sons, Fulham, staged an attractive collection of Palms, Hyacinths, &c., and Messrs. F. and A. Smith of Dulwich sent a stand of out flowers of *Cinerarias*.

A botanical certificate was awarded to Sir George Macleay, Bart., Blethieghley, for a *Tillandsia* from Jamaica. Henry Little, Esq., of Hillingdon Place, received a first-class certificate for *Cyclamen persicum Ruby*—a decided improvement, and a most conspicuous and ornamental flower. First-class certificates were awarded to Messrs. Veitch & Sons for *Poinsettia pulcherrima plenissima*, also for Croton McArthurian and C. Earl of Derby. A first-class certificate was given to Mr. R. Gilbert, Burghley, for *Primula Marobionæ* of Exeter, a fine double variety; and a similar award was made to Mr. R. Dean for *Primula purpurea*, also to Mr. H. Bennett for *Rose Duchesse de Vallombrosa*.

Mr. Dushell of Leighton Buzzard exhibited samples of different sorts of sand for horticultural purposes. The Exhibition was one of the most attractive and successful of the year.

ROYAL BOTANIC SOCIETY.

MARCH 21st.

ALTHOUGH the first "Park" exhibition was held on the first day of spring the weather was most unspringlike, for snow fell freely in the morning, and the north-east wind was unpropitious for plants and visitors alike. The date of the Show was in another respect unfortunate, as clashing with the meeting of the Royal Horticultural Society. Expressions of disappointment from exhibitors and others have not been few in consequence of the two shows occurring on the same day, and we know that both exhibitions have to some extent suffered, yet the Royal Botanic Society's first show was both extensive and excellent. There was a falling-off in the stove and greenhouse plants; but the Hyacinths especially, and bulbous plants generally, afforded full compensation by their numbers and quality. The Azaleas were also very good, and the exhibition in the mode of its arrangement reflected credit on Mr. Coomber.

In the class for twelve stove and greenhouse plants (open) Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., St. John's Lodge, Regent's Park, was the only exhibitor, staging two *Imantophyllums*, two *Eriostemons*, a very good *Tetratheca*, *Cypridium villosum*, *Phalænopsis Schilleriana*, *Cochlostema Jacobinum*, &c., medium-sized plants in good condition, for which the first prize was awarded. For six hardy shrubs in flower, which was also an open class, only one collection was staged—by Mr. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston-on-Thames. The plants comprised a large Ghent Azalea and a still larger Lilac, with medium-sized and well-bloomed *Rhododendrons*, *Prunus sinensis*, and *Andromeda floribunda*, to which the Judges awarded a first prize.

In the amateurs' class for six greenhouse Azaleas Mr. Ratty, gardener to R. Thornton, Esq., The Hoe, Sydenham Hill, was placed first for well-bloomed pyramids 4 to 6 feet high: the best light variety was Madame Cannart d'Hamale, and the most effective scarlet *Magnum Bonum*, Stella being also very good. Mr. James, gardener to W. F. Watson, Esq., Redles, was second with medium-sized double plants in good condition; and Mr. Wheeler third. In the corresponding class for nurserymen Mr. Turner, Slough, had the stage to himself. A fine plant of Belle Gantoise, rosy lilac, was very lovely; and Ferdinand Kegeljan, Duc de Nassau, and Apollo, white with pink stripes, were highly attractive.

For six Chinese *Primulas* Mr. James was awarded the first prize for good plants of a fine strain, Mr. Wheeler being placed second; and for six hardy *Primulas* Mr. Dean, Ealing, was the only exhibitor, and was awarded the first prize. *P. purpurea* was extremely beautiful, as also was *P. dentata*. The remainder comprised *P. altaica*, *P. vulgaris* Rosy Morn, a double white and a yellow duplex variety.

In the class for six forced *Roses* (nurserymen) Mr. Turner had no competitors; he staged admirable plants for the early season of a rose, foliage and blooms being alike good. Marquise de Castellane was very fine—the globular-shaped plant being 4 feet in diameter, and contained over fifty capital blooms. Paul Verdier was also excellent. The remainder consisted of Alfred Colomb, Céline Forester, Le Mont Blanc, and Souvenir d'un Ami. For six *Deutzias* (open), Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, exhibited his well-grown columnar-shaped plants 4 feet high and 18 inches in diameter; but the whole of the flowers were scarcely expanded, consequently first honours went to Mr. James, Redles, for smaller plants in capital condition both as regards flowers and foliage; Mr. Douglas being awarded the second prize.

In the open class for twelve *Cyclamen* Mr. James secured first honours with splendidly-grown plants, each averaging 150 flowers, the foliage also being excellent. Mr. Edmunds, Hayes Nursery, Middlesex, was second with a very good collection; and Mr. Smith, Ealing, third. In the amateurs' class for six plants, H. Little, Esq., Hillingdon Place, Uxbridge, was placed first for very large plants but with rather small flowers, and Mr. James second with smaller plants but better flowers.

For six pots of Lily of the Valley Mr. Douglas was first with capital pots, the flowers and foliage being alike good; and Mr. Weir second.

Hyacinths were numerous and superior. In the open class for twelve plants there were six competitors, Mr. Douglas proving the victor with really grand spikes. The varieties were—Reds: Von Schiller, Vurbach, Koh-i-noor, and Fabiola. Blues: King of the Blues, Baron Van Tuijl, De Candolle, and General Havelock. Whites: La Grandesse and Mont Blanc, with Grandeur à Merveille, waxy white, and Ida, yellow. The second prize went to Messrs. Barr & Sguden for almost equally fine spikes. In this collection the best white was La Grandesse, the best red Vurbach, and the best blue Czar Peter. Third honours went to Messrs. Cutbush & Son, Highgate; extra prizes being awarded to Messrs. Osborn & Sons, Fulham, and Mr. Moorman, gardener to the Misses Chatter, the last being a very smart and excellent group.

In the amateurs' class for twelve plants Mr. Douglas was again pre-eminent, yet only a few points ahead of Mr. Moorman, who had the second prize, both the collections being admirable; the third prize going to Mr. Weir, gardener to Mrs. Hodgson, The Elms, Hampstead.

In the nurserymen's class for twelve plants Messrs. Barr and Sguden were placed first for splendid spikes, Messrs. Cutbush and Sons second for spikes only a shade behind them, and Messrs. Osborne & Sons third, also for an excellent collection.

Tulips were excellently exhibited. Mr. Douglas was first in the amateurs' class for twelve pots with the very best blooms in the Show of Vander Neer, White, and Pottebakker. Vermillion Brilliant, and Keyzers Kroon. Mr. Moorman was, however, close to the champion's heels with the same varieties, and had the second prize; Mr. Weir being placed third, also with good blooms. In the nurserymen's class for twelve pots Messrs. Barr & Sguden were placed first for capital pots of Joost Van Vondel, Cerise Gristleline, Vermillion Brilliant, and Proserpine. Messrs. Carter and Co. were second with vigorous and sturdy plants of Rose Luisant, Chrysolars, White Pottebakker, and Vermillion Brilliant; Messrs. Cutbush & Sons having the third place.

In the open class for twelve pots of Narcissuses in four kinds Messrs. Barr & Sguden won with large potsful (for the plants had not been grown in the pots in which they were exhibited) of Newton, Gloriosa, Bazelman Major, and Perle Blanche. Mr. Douglas was second with the same varieties and Perle Blanche. This was the more creditable collection, inasmuch as the plants were about as good as the others and had not been "made up," but were grown in the pots as exhibited.

Prizes were provided also for twelve bulbous plants in six varieties, distinct from any of the foregoing. Mr. Roberts, gardener to W. J. Terry, Esq., Peterborough House, Fulham, was the only exhibitor, and was awarded the first prize. The group comprised Muscari botryoides in four varieties, Lachenalia, Scillas, and Amaryllises.

In the miscellaneous classes some superior collections were exhibited. Messrs. Veitch staged a hundred Hyacinths, remarkable for the breadth and vigour of the spikes and the massiveness of the bells. The finest white was probably La Grandesse, closely followed, however, by Snowball, Mont Blanc, and L'Innocence. Amongst the light blues Lord Derby, Princess Mary of Cambridge, Czar Peter, and Blondin, were conspicuous; the finest dark blues being King of the Blues, Baron Van Tuijl, and Bleu Admirable. Amongst the nearly blacks Masterpiece was very noticeable by its depth of colour and fine bells; General Havelock by its massive spikes; Prince Albert also being superior. The best reds were Garibaldi, Prince Albert Victor, Pelissier, and Etna, the last-named being remarkable for its broad segments. The best yellows were L'Or d'Australie, Obelisque, and Ida. Messrs. Veitch also exhibited a large collection of Tulips.

A collection of 150 Hyacinths from Messrs. Barr & Sguden were staged in splendid condition, almost every spike being perfect. The collection embraced all the best varieties in cultivation. Messrs. James Carter & Co. also staged upwards of one hundred plants, but some of the bells were not fully expanded; they were, however, very good, as were the Tulips and Dielytras staged by this firm. Messrs. Cutbush & Son also staged a large and good collection; and Messrs. Osborn & Sons, Fulham, also contributed to the Show.

Messrs. Veitch further staged Clematises and a small but choice collection of ornamental-foliage plants, conspicuous amongst which we noticed a new Croton—Earl of Derby. This is decidedly the best of the trilobed section; the stem, petioles, and two-thirds of the leaves being canary-yellow, the remaining portion bright green. It is very striking. *C. varisabilis*, *C. McArthurii*, and *C. nobilis* were also exhibited; also new Ferns and Carnations and Euryclis australis.

Mr. B. S. Williams exhibited a large and attractive group of miscellaneous plants, including Palms, Dracenas, Orchids, Cyclamens, Yuccas, &c., in capital condition. The Rhopalas—Cercovandse and Juhngel—in this group had the commanding appearance. Mr. Turner, Slough, exhibited Carnation Rose

Perfection very fine, and cut blooms of superior quality of Gloire de Lyon, Mazaepa, and Fairy Queen. Mr. Edmunds and Mr. Smith staged large and good collections of Cyclamens, and Messrs. Wm. Paul & Sons, Waltham Cross, several boxes of cut blooms of Camellias in fifty varieties of the best sorts in cultivation. Conspicuous amongst them were the single varieties Coralina (velvety scarlet) and Elgans, rose. This collection was greatly admired. Single flowers of Cinerarias of good quality came from Messrs. F. & A. Smith, Dulwich. Certificates were awarded to Mr. James, Redlee, Isleworth, for the following Cinerarias:—Mrs. F. Watson, rosy crimson, white ring, flower of great substance; Mary, rosy pink, perfect in form; Thos. Winter, violet purple, very massive; Thos. Slenit, rich rosy maroon, very superior; Purple Gem, purple, white ring, immense size; Jane, rosy lilac, large and fine; Mrs. W. W. W., velvety purple, extremely fine. These are without doubt the finest Cinerarias which have ever been exhibited. Also to Messrs. Veitch for the following new Hyacinths:—Queen of Lilacs, rosy lilac, very distinct and fine; Marquis of Lorne, a bright lively blue, attractive; Reine de Naples, warm rosy salmon, with broad segments; Globosa, double white, gigantic bells; and Orange Queen, reddish crimson. Also for new Ferns—*Adiantum semulum*, somewhat resembling *A. assuile*, but more elegant; *Nephrolepis Duffii*, a very distinct dwarf species; *Asplenium pyrenaica*, a handsome and stately Tree Fern, and for *A. philippinense*; also for *Panax laciniatus*, *Euryclis australis*, and *Masdevallia chimera*. To Mr. Turner for Carnation, Rose Perfection, and to Mr. B. S. Williams for *Demosthenia dealoides* Youngii and *Panax laciniatus*. A similar award was made to Messrs. Rollison & Sons for *Panacea* roses, a distinct species with bright rosy flowers. It was found on the Grampian C. in Victoria at an elevation of 5000 feet. It will prove a valuable plant for the decoration of the greenhouse and for exhibition purposes. Certificates were also awarded to Mr. C. Edmunds, Hayes Nursery, Middlesex, for *Cyclamens roseum superbum* and White Swan. These were extremely fine and merited the distinction accorded to them.

NOTES AND GLEANINGS.

We are informed that the following gentlemen have consented to act as local honorary secretaries of the NATIONAL ROSE SOCIETY, and to promote its interests in their several localities:—Cauterbury: W. Mount, Esq.; Bath: R. B. Cater, Esq.; Cheshire: J. Tinsly, Esq.; Bromsgrove: R. Cordell, Esq.; Croydon: E. Mawley, Esq.; Exeter: R. G. A. Baker, Esq.; Hereford: the Rev. C. H. Bulmer; Maidstone: Hubert Bosted, Esq.; Leek: W. Newall, Esq.; Newark: the Rev. Canon Hole; Reigate: the Rev. Alan Chesley; Windsor and vicinity: G. Hawley, Esq.; Warrington: J. Hinton, Esq.; and Oxford: C. R. Ridley, Esq.

MR. BAKER, late gardener to Mr. Bassett, Sisters House, Clapham Common, and member of the Floral Committee of the Royal Horticultural Society, is well known as one of our best gardeners. Since his establishment in his new charge as gardener and bailiff to E. C. Baring, Esq., Coombe Cottage, Kingston-on-Thames, he has effected many improvements both in the re-erection of glass structures and in the ornamentation of the grounds. The plants and fruit houses in this garden are very numerous, but have been erected in the most strange manner imaginable, house having been added to house at almost all angles, and with all aspects except (strange to say), the south. A something like systematic arrangement is now being gradually adopted, and when an affluent gentleman of horticultural tastes and a gardener of admitted ability co-operate, good results are certain to follow. The houses are being well stocked, and plant culture, fruit growing, and vegetable forcing are in full operation. The details we cannot allude to now, but the gardens at Coombe Cottage are worthy of a note for the good order and condition of every department.

VARIOUS means are occasionally resorted to for preventing injury to the roots of CUCUMBERS and MELONS by the violent heating of the fermenting manure; but the simplest and best we have seen is the plan adopted by Mr. Denning in Lord Lonsborough's garden at Norbiton. The plants are planted as usual on hillocks, but before placing the soil on the manure a large flower pot—a 7 or 8-inch pot—is laid on its side and over this the cone of soil is placed, leaving, however, the bottom of the pot exposed through one side of the hillock, when, as may be readily understood, any excess of heat from the manure immediately under the roots of the plant escapes through the aperture of the pot, and burning is effectually prevented. As this is the period when Cucumbers are being largely planted Mr. Denning's safety-valve against root-burning is well worthy of attention.

— A FLORAL treat has lately been afforded by Messrs. Veitch & Sons to the inhabitants residing in the neighbourhood of the COOMBE WOOD NURSERIES. It is there where the renowned Hyacinths are grown preparatory to being exhibited, and previous to the departure of the plants for Chelsea they were open to inspection. We happened to see the plants when they were being prepared for removal. Each spike was carefully supported with a stake of stout wire bent near the bottom so that it could be inserted in the soil below the bulb. The bells were carefully arranged, a few being removed where too crowded, and the pots were placed in others an inch or two larger and the surfaces neatly mossed. The improvement resulting from the "dressing" as performed by Mr. Hill, the skilful grower of the plants, was very decided. The quality of the spikes has never been surpassed. Out of 1200 plants it would be difficult to find a dozen not suitable for exhibition. The first plant in the house, Lord Derby, we measured and found the spike to be nearly 14 inches in circumference. We will not now particularise the varieties, which are of the best. The forced Roses and Clematises are also in admirable condition. Indeed the nursery generally, which is highly picturesque, is in a superior state throughout.

— We recently saw growing vigorously in the soil of a Geranium pot at Messrs. Kollieon's Nurseries the curious parasitic plant OROBANCHE MAJOR. The two Asparagus-like heads of the parasite were just expanding their flowers, and the Geranium appeared to be in the best of health, notwithstanding the supposed pernicious effects of this parasite on plants growing near it.

— GABREA ELLIPTICA is generally considered of doubtful hardiness, hence it is deemed desirable to afford it a warm situation or a wall with a south aspect. We were pleased to see two plants forming the background of a drinking fountain in the village of Easington, in the North Riding of Yorkshire, with very healthy deep green foliage, and bearing their graceful long pale green catkins profusely. The plants are about a yard high, but their health and drooping catkins struck us as noteworthy, and not less the peculiar fitness of the plants for the position occupied, anything drooping associating well with water, whilst the dark foliage stood out in bold relief to the masonry. The plants have no shelter except a low Thorn or Quick hedge to the north.

— THERE is a very simple way of avoiding the disagreeable SMOKE AND GAS which always pours into the room when a fire is lit in a stove, heater, or fireplace on a damp day. Put in the wood and coal as usual, but before lighting them ignite a handful of paper or shavings placed on the top of the coal. This produces a current of hot air in the chimney, which draws up the smoke and gas at once. Not one person out of fifty, says the *Scientific American*, ever thinks of this easy expedient.

— THE correspondent at Alexandria of the *Daily News* writes: You will be glad to receive an account of the remarkable discovery of a NEW COTTON PLANT, which, from all reasonable appearances, is destined in a very few years to create quite a revolution in the cotton agriculture and business of Egypt. Signor Giacomo Russi, the Austrian consular agent in the most important cotton district, has published an interesting account of the discovery of the new plant. It was discovered on the cultivated property of a Copt in the Memna district about two years ago. It was found among other cotton plants, and at once attracted attention by its different appearance and also by bearing more pods. Next year he ascertained beyond all doubt that the produce was of a superior quality, and that its cultivation in Egypt presented no difficulty. So much interest was excited by the discovery that the small quantity of seed that could be collected was sold at twelve Egyptian sovereigns the ardeb—a high price when it is remembered that the very best seed of other cotton never exceeds £1 per ardeb. Signor Russi mentions that by many people the plant is supposed to be the growth of seed imported from the Brazils, while others think it the result of a mere chance combination of mixed seed. Signor Russi does not accept either view, and proceeds to describe the plant as having a long stem and being without branches, so that a good deal of space is saved in cultivation, to the advantage of course of the cultivator. The new plant bears on an average from forty-five to fifty pods, whereas the usual cotton plant averages from twenty-five to thirty-five.

— WRITING to us ON FAVOURITE TREES a correspondent states the last house inhabited by John Milton was in Queen Anne's Gate, Westminster, overlooking the Green Park. In

demolishing the house the stone tablet erected to his memory and affixed to the wall by Jeremy Bentham, who afterwards occupied the next premises, has been carefully preserved. It is about 2 feet square, and bears the following inscription:—"Sacred to Milton, Prince of Poets." It is said that when Bentham took visitors to view the house he compelled them to kneel before the slab. The Mulberry tree planted by Milton, which was so severely scorched at the fire at Mr. Hankey's, is fairly recovered, and that gentleman, who is carrying out the work of demolition and the erection of colossal mansions on the sites, is extremely anxious as to its welfare. The Ash tree in Beaufield churchyard, beneath which Edmund Waller rests, is well preserved. Shakespeare's Mulberry tree and Rousseau's Walnut tree are all renowned.

— Now that forced flowers play such an important part in the decoration of conservatories during the spring months, the value for that purpose of the JAPANESE AZALEAS (*A. mollis*) must not be overlooked. A mollie was raised from seeds imported from Japan by C. Maximowicz. To the late Mr. Van Houtte must be ascribed the honour of distributing this tribe of Azaleas in several fine varieties, and which are gradually finding their way into many gardens. The flowers are much larger than those of the Ghent Azaleas, and are varied in colour, the plants producing dense masses of flower. A few fine varieties which we have recently seen are Comte de Gomer, rose, orange apots; C. Francois Luppis, rose shaded with magenta; Comte de Quincy, yellow; M. Charles Van Wambeke, orange and rose; Alphonse Lavallée, orange and scarlet; and Dr. Leon Vignes, white spotted with orange. They are quite hardy.

— FEW flowers are more valued during the winter months than WHITE CAMELLIAS, and one of the finest that has recently come under our notice is La Vestale as exhibited at South Kensington by Mr. Charles Turner. Although this was placed in a stand with other white blooms its purity, smoothness, and superior texture of petal were conspicuous and greatly admired. If the plant is as free in growth as the flower is good in quality it must take a foremost place in choice collections of these winter flowers.

— THE total amount that has been contributed in response to the appeal made by Mr. Luckhurst on behalf of the widow and eight young children of the late T. C. SAGE, who by his sudden death were left totally unprovided for, is £32 14s. 6d. This sum has been handed to Mrs. Sage, who is most grateful, and earnestly desires to express her heartfelt thanks for the kindness and sympathy shown to her in her great distress and sorrow. Subscribers to the fund will be glad to learn that the money has been applied to the opening of a small shop for the sale of toys and fancy goods at 9, Crown Road, Fulham, and that, notwithstanding Mrs. Sage's delicate health, the venture is prosperous, and is likely to continue so.

— A GERMAN journal recommends for the preservation of CUT FLOWERS almost indefinitely, either singly or in bouquets, that they be dipped in a solution of pure albumen, and after allowing them to become perfectly dry that the operation be repeated several times, each time with fresh albumen. The white of an egg is nearly pure albumen.

— ONE of the most effectual of deciduous shrubs for forcing for conservatory decoration is the GUELDER ROSE (*Viburnum opulus*). Messrs. Veitch force many plants of it, and they are in great demand for decorative purposes. Plants in 8-inch pots will produce heads 2 to 3 feet in diameter, and these when covered with twenty to thirty "snowballs" are extremely effective. A shrub so easily cultivated and prepared for forcing should be increased and grown in all gardens where spring flowers are in request and means are provided for producing them. They may be grown as standards of from 2 to 6 feet in height, according to the purposes for which they are required, and few plants will be more conspicuous at the period of their flowering—February and March onwards.

— We have received a copy of the sixth edition of "AGROGEOGRAPHIA," a treatise on cultivated Grasses revised for the Lawson Seed and Nursery Company by Mr. David Syme. Mr. Syme has done his work well, having given historical notes of the Grasses, with the uses and adaptations of the most important species, which are also represented by coloured figures. The treatise is both useful and entertaining.

— ALTHOUGH it has suited the purpose of some writers to be factitious when referring to the COLORADO POTATE BEETLE, regarding it almost as a myth and its transit across the

Atlantic an impossibility, yet according to the evidence of the Earl of Carnarvon in the House of Lords the insect is now established in Europe, and orders in Council have been issued preventing its transit from Germany to England. It is calculated that in the course of the summer the insect brings forth three generations, and that a couple of Colorado beetles will annually produce fourteen thousand insects. The following is the history of the pest. It was first perceived in America in 1823 in the Rocky Mountains. As it did not find sufficient food in the barren soil of those parts it emigrated to more fertile land, and finding the Potato to its taste fastened upon it in preference to all other food. Thus in a short time all the Potato fields were devastated. In 1859 it caused immense mischief in the territory of Nebraska; in 1861 it overran the State of Missouri and was observed in Iowa. In 1865 it entered Minnesota, and in the following year it crossed the Mississippi River and invaded the States of Wisconsin, Illinois, and Kentucky. In 1870 it appeared in the States of Michigan and Ohio; the lake of the former proved no obstacle to its advance. In 1871 it penetrated into Canada, Pennsylvania, and New York. Lastly, in 1874 ships brought it over to Germany in boxes containing Potatoes. The insect was concealed in the earth that enveloped the tubers and in the dry leaves in which they were packed.

— We have received from Mr. Abbey some BUNCHES OF VIOLETS taken from plants which have been flowering in frames since October. Though the plants have bloomed for nearly six months the flowers now produced are very superior. Especially fine is the true Neapolitan, of which there are several varieties, the one sent having been received from Florence. It is the finest, sweetest, and most floriferous of all double Violets. Victoria Regina is the best of the singles excepting Prince Consort, which is lighter—nearly blue—in colour. We never saw finer Violets than these, nor cleaner and better foliage.

— The following are the “vivid imaginings” of an American mind who has been haunted with the FRANKS OF THE PANSIES. “There is something about Pansies charmingly companionable, social, fairy-like. They look at you in a knowing way, and nod their heads, and once in a while you will see one hid away in the leaves, actually ‘laughing in his sleeve’; and if you look pretty sharp you will be very apt to detect some impudent fellow ‘making faces’ at you. We have observed that they do this more frequently and boldly just about dusk.”

— “I HAVE lately,” writes Mr. Darwin in “Nature,” “received an interesting letter from Fritz Müller in St. Catharina, Brazil, on the subject of HYGROSCOPIC SEEDS. He tells me that in the highlands of the Uruguay he has succeeded in discovering more than a dozen Grasses, as well as a species of Geranium, whose awns are capable of hygroscopic torsion. The most curious among the specimens received are the seeds belonging to the genus *Aristida*. In one of these the awn is longitudinally divided into three fine tails, 6 or 8 inches in length, each of which twists on its own axis when the seed is dried. These tails project in three directions, and more or less at right angles to the axis of the seed, and Fritz Müller states that they serve to hold it in an upright position with its lower end resting on the ground. The seed is pointed and barbed in the usual manner, and when it is made to rotate by the twisting of the awns, it evidently forms a most effectual boring instrument, for Fritz Müller found many seeds which had penetrated the hard soil in which the parent plant was growing. In another species of *Aristida*, as the tails wind together and form the strands, the seed is made to rotate and thus bury itself in the ground.”

HYACINTHS AFTER FLOWERING.

A SHORT time ago a suggestive letter on the importance of preserving and maturing the foliage of Lilies of the Valley appeared in the Journal from the Hon. and Rev. J. T. Boscawen. The force of Mr. Boscawen's observations have no doubt been appreciated by many readers, for, as was remarked in connection with the letter, without good foliage there can be no perfect flowers. If that observation applies, as it does apply, to the one prime essential in the support and maturation of the rhizomes and crowns of Lilies, it applies with at least equal force to the sustenance and ripening of the bulbs of Hyacinths. Without good foliage there cannot be good bulbs, and without good bulbs there cannot be good flowers. That is

the logic of facts, and it is easy to be remembered by all who have latterly been indulging in the pleasure of growing Hyacinths, and who desire to preserve the bulbs in as good a condition as possible for producing flowers in future years.

Hyacinths are not annuals, to be flowered once and done with; they are perennials, and with ordinary care will yield perennial beauty. It is not suggested that the spikes produced by Hyacinths in future years will equal in size and beauty those which were produced during the first season's flowering in England. The bulbs on arrival from Holland were at their best—the zenith of their maturity; but that is no reason that they should be destroyed immediately afterwards, any more than a fruit tree or a horse should be “put out of sight” by violent means when the first signs of declining vigor have become apparent. Rather should the waning resources—valuable even if declining—be aided, in order that a maximum of value may be derived over as long a period of time as possible.

Than Hyacinths no flowers are more popular, none more easily managed, none more extensively cultivated. The number of purchasers of bulbs are increasing yearly, and would increase still more could the bulbs be induced to produce flowers year after year instead of making one “grand flash,” like the *finale* of a pyrotechnic display, and then “done with.” Hyacinths are imported by millions; but what becomes of them? Why, they are killed. There is no reason that this should be so, but every reason why they should be preserved. Until the flowering period they are treated with solicitous care, and air, light, and water are provided to render them as perfect as possible; but as soon as flowering is over the three essentials are no longer regarded as important, yet they are as important as ever in producing good foliage, which is the certain forerunner of good flowers during the following year.

As soon as the flowers of a Hyacinth have faded the spike should be cut, or seeds will possibly form, which are more exhaustive than the flowers. The foliage should then be induced to make vigorous and prolonged growth by the assistance of good food—manure water, and under the influence of sun and air. Early-flowering Hyacinths can only have their growth perfected by being kept in artificially heated houses; but others (and these are the great majority) which flower late—*i.e.*, in March and April, need nothing more than a cold frame, or even the shelter of mats, to preserve the foliage from injury after flowering has ceased. It should be remembered that the foliage of Hyacinths which have been grown under glass is as susceptible of injury by sudden exposure to the sun as by the influence of a low temperature. There must be no flagging, scorching, or discoloration that can be prevented by shade, shelter, and attention. The plants should be gradually hardened, and when green and healthy may be planted out closely together in light soil. There they may remain until the foliage decays, when the bulbs may be assorted and stored until September, when they may be potted or planted where they are required to flower. Some of the bulbs, if the management has been judicious, will produce very good spikes, while others will not be worthy of being potted, but may be planted where they can remain and increase. These preserved bulbs, which are again potted, should only be regarded as supplementary to the Dutch-grown bulbs which are potted singly for producing stately spikes, the home-grown bulbs being potted three to five in each pot for producing masses of smaller spikes, which are very beautiful, and are invaluable for yielding out flowers and conserving the principal spikes.

As an instance that the preservation of forced Hyacinth bulbs does not militate against the purchase of superior Dutch-grown produce I can adduce very good testimony. Some years ago on taking charge of a garden the owner stated that he was tired of buying Hyacinths, which he could only enjoy one month, the bulbs being then “exhausted and wasted.” I bought a dozen myself, and so managed them that they nearly all flowered well the second year. When my employer saw this he was encouraged to purchase, and he now does not hesitate to buy a hundred bulbs annually where he once refused to buy a dozen. His garden is now, to use a common phrase, “full of Hyacinths,” which each year produce a charming effect, and afford hundreds of spikes for cutting and distributing amongst friends. This is simply the result of preserving in the best manner possible the forced bulbs by encouraging the growth of good foliage after flowering by the assistance of generous treatment, light and air.

Hyacinths which have flowered in water should as soon as possible be carefully placed in leaf soil or cocoa-nut fibre refuse, and be kept moist so as to preserve the foliage as long

as possible. The bulbs can afterwards be planted in light rich soil, and in two years and onwards they will produce attractive spikes. These bulbs are of little use for potting; but Hyacinths which have flowered late in pots are, if well and carefully managed, very valuable in future years.—A DOCTOR'S GARDENER.

FICUS PARCELLII.

FRESH interest has been evinced in this beautiful variegated stove plant since it has arrived at a fruiting state with some cultivators, and from the fact that the fruits are attractive as well as the foliage. To many the plant is well known, but,

remained there until the third week in October, when they were removed to a cold house. In the month of December they began showing signs of growth, and they were shaken out and repotted into pots from 7 to 9 inches in diameter, the compost used consisting of two parts of loam and one of leaf soil, with enough pounded charcoal and sand to give porosity, rubbing a liberal quantity of dried cow dung into the whole. They were potted moderately firm. About the middle of January they were placed in ainery having a night temperature of 50°, rising to 60° in the daytime with sun heat. As soon as the pots were filled with roots they were supplied about twice a-week with manure water in an almost clear state,



Fig. 29.—FICUS PARCELLII.

judging from letters which we have received, there are others to whom it is not familiar. Messrs. Veitch & Sons have enabled us to publish a truthful representation of a leaf of the plant, which is conspicuous from its distinct colours and their decided contrast. The plant, we need only add, is of easy culture, and is very useful for general decorative purposes.

SPIRÆA JAPONICA CULTURE.

THESE is now flowering in the conservatory of C. Massey, Esq., The Beeches, Newcastle-under-Lyme, some fine specimens of the well-known *Spiræa* (*Hoteia*) *japonica*, a plant which deservedly holds a foremost place amongst our spring-flowering plants, especially where there is any demand for cut flowers. The plants alluded to are bearing from twenty to twenty-five spikes of bloom on each, one in particular having thirty, with its beautiful foliage measuring nearly 3 feet across.

Mr. S. Kirkham states the following as his mode of culture. The plants were forced last year in 6-inch pots, and were afterwards placed in their pot outside under a fence having a western aspect, and, being supplied with abundance of water,

made from the scrapings of the poultry yard, until the flowers began expanding, when it was discontinued. The plants are now in the conservatory, and are admired by all who see them.

HAMPTON COURT PALACE AND GARDENS.

THIS royal palace is delightfully situated on the north bank of the river Thames, fourteen miles from London. It is embellished by nature as well as art, and is historically associated with the lives of illustrious men. It was built by Cardinal Wolsey, who is said to have provided here two hundred and eighty silk beds for strangers only, and richly stored it with gold and silver plate. It caused so much envy that he gave it to King Henry VIII., who in return allowed him to live in his palace at Richmond. This king greatly enlarged Hampton Court. Queen Elizabeth adorned it with pictures and other ornaments, but King Charles I. is mentioned as having given his personal attention to the garden. The semicircular garden spreading from the terrace of the east front was planned by him. We are informed that Charles II. superintended the royal garden if any alterations were going on, or he was fond of out-

door exercise; and it was here that he observed to some who were reviling our climate and extolling that of Italy, Spain, and France, that he thought that was the best climate where we can be abroad in the air with pleasure the most days of the year and the most hours of the day, and this he thought could be in England more than in any other country.

King William III. and Queen Mary made great improvements, both in the palace and the grounds. The old apartments were pulled down and rebuilt as they now appear. The private garden on the south side of the palace was sunk 10 feet to open a view from the apartments to the river. It was surrounded with a tall hedge to shelter from the winds such exotic plants as were moved hither from the conservatories. There are two basins constantly supplied with water for the supply of the plants in dry weather. The plants were seen from the windows of the royal apartments, and in this part of the garden the Queen took great delight, and was so fond of tender

exotic plants that she allowed a handsome salary to Dr. Plukenet for assisting to arrange and regulate her plants, also to register all that were received. This part of the garden is tastefully laid out, and is the work of those two eminent gardeners, London and Wise.

On the north side of the Palace is the wilderness garden. In the olden times it was the custom for a portion of the pleasure grounds to be in as natural a state as possible, making a strong contrast with the exact symmetry which everywhere prevailed. In the Dutch geometrical garden, where every tree was planted with exactness, evergreens were indispensable. The Box, Holly, and the Yew, with two or three others, made up the furniture of the garden; the scissors and the shears were the principal garden tools; clipping and pinching were scrupulously carried out; cones and pyramids, and forms of beasts and birds, rude copies of works of art were made, and of these, topiary works as they were called, the remains may

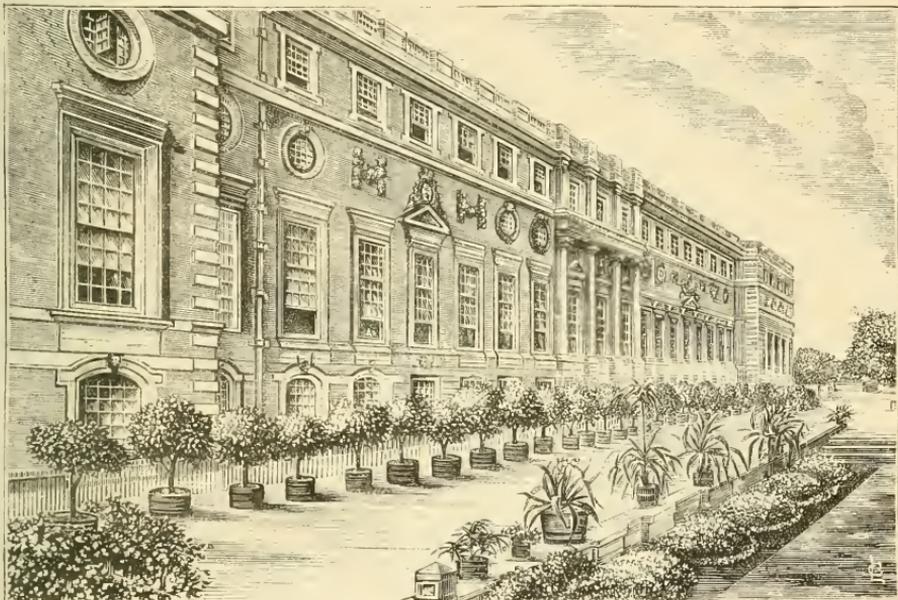


Fig. 33.—HAMPTON COURT PALACE—SOUTH TERRACE WALK.

now be seen, but most of the trees have grown into their natural shape.

Of this garden, which was considered one of the finest in England, Horace Walpole recorded his great admiration; those fanciful figures appeared to him interesting and beautiful from the variety of objects exhibited, and were pleasing to the eyes of Addison and others. They admired the neatness and the workmanship, and would not have a single specimen destroyed.

The taste for natural scene, has much improved of late years, and the specimens of ancient gardening are now esteemed as remains of antiquity. The most distinguished are those grand avenues of Hampton Court and Windsor Castle. They are noble examples worthy to be imitated, for there is something grand and venerable about long green avenues and broad carriage drives. No trouble or expense has been spared to adorn the garden with the choicest flowers, and for the lovers of trees there is no place more interesting. Trees that were beautiful two hundred years ago are picturesque now, and such trees are the most esteemed ornaments in our modern pleasure grounds. There are some very venerable specimens. The Limes have attained a large size, many of them being 12 feet in circumference and 100 feet high. The Elms are conspicuous for size and beauty, measuring 25 feet in girth. The Oaks are gigantic in size, one measuring over 40 feet in girth near the ground. It divides into three large limbs of nearly

equal size. The Horse Chestnut trees are favourites with the Londoners, and their splendid foliage and fine spikes of flowers entitle them to be considered one of our most ornamental trees, and are a beautiful addition to the appearance of this place. The artificial decorations, fountains, statues, and vases are in harmony and pleasing contrast with the natural ornaments.

The gardens are well managed, and last year the flower garden was admitted to be equal to those in the London parks. The "great Vine" is increasingly popular. It is in what is known as the "private garden," and it is annually visited by thousands of sight-seers, to whom the two to three thousand bunches of Grapes are something to be wondered at, and, perhaps, coveted during the sultry days of summer.—N. COLLE.

JACOBÆAN LILY.

SPREKELIA (AMARYLLIS) FORMOSISSIMA was introduced as far back as 1658, and I believe was formerly more generally cultivated than it is now. Although treated as a stove and greenhouse plant it is said to be perfectly hardy. I have not proved this, but I believe my authority is reliable. The requirements of the plants are few and simple. I will suppose the plants are in bloom in April. The flower scape appears before the leaves. As the leaves advance the plants should be attended to with water. When the foliage turns yellow water should

be gradually withheld until the bulbs are matured, when they may then be stored away in some cool dry place. The secret of success in flowering these Lillies is a long season of drought or rest. They should be potted in well-drained pots in a compost of good sound loam, well-decomposed vegetable matter, and coarse sand or charcoal dust. They are the better for being potted some time before they are expected to start into growth. When root-action has commenced they should be supplied with water as they may require it; and when fairly growing, if they can be taken into a gentle heat, the scape will soon appear. When in bloom their beauty will well repay any amount of labour that may have been bestowed upon them. Where there is a stock of bulbs, with careful observation and notes they may be had in bloom for a considerable time. They are increased by offsets. I should be glad to have further evidence respecting the hardness of this old favourite.—SCAPACEOUS.

GUMMING AND CANKER.

The cause of gumming, that is, the extravasation of the sap of certain fruit trees, has not, I think, been clearly traced to its source in every instance. Heat is said to be one of the principal causes of this evil, but what will the advocates of such a theory think when I assert that cold appears to me to exercise an important influence for evil in this matter? In making this statement I must own that I am not prepared to say that gumming does not sometimes arise from heat, but it should not be forgotten that in attributing it to heat we infer that it proceeds from some internal disorders, some derangement of the system—in point of fact, that the disease is organic, and consequently incurable, as, indeed, the swollen gouty appearance of the joints of some trees that are badly affected might fairly induce us to suppose.

Göthe, in showing that all trees and plants consisted of two parts only—leaf and stem, that the bark is simply an extension of a leaf, the roots and branches just so many prolongations of the stem—did good service to science, and taught a lesson of such importance that a clear comprehension of its full significance ought to enable one to trace every disease, and especially gumming, to its source more readily and with far greater certainty than could be done without such knowledge. Regarded as a portion or rather extension of the leaf, the texture of the bark assumes a much greater degree of delicacy to the mental vision, and these follow a consequent realisation of the harm which may happen to it from rough treatment, or even from undue exposure. Bruises and wounds from blows with the trainer's hammer or mallet, from clumsily driven nails, neglected fastenings of string, wire, and even of cloth shreds, are by far too common, and every one of them entails a risk of gumming which in reality often follows. The exposure to severe frost of the delicate outside of the unripened growth of the Peach and Nectarine induces canker and premature decay. Thus, young trees of both species having the protection of a wall sometimes present the anomalous appearance of growth of extraordinary vigour blotched with disease, as though the bark had been in contact with some burning substance, destroying its tissue and causing the wood to decay. Now these plague spots invariably make their appearance upon the exposed side of the branches and never upon the side touching the wall; it is therefore self-evident that the mischief proceeds from external causes and not from any disorder of the system. Moreover, it is reasonable to suppose that the green crude bark of a gross unripe shoot would be more susceptible of injury from frost than that of wood which not being so rampant has come to its full maturity earlier in the season.

Certain sorts of Cherries are subject to attacks of gumming, others to canker, and it is curious to observe how each form of disease is developed in different sorts. In *Empress Eugénie* gumming presents itself upon the close-pruned lateral growth, the stem and main branches presenting the aspect of perfect health in contrast to this. Early Purple Gem has swollen gouty joints, the stem and branches sometimes absolutely glistening with extravasated sap. This was notably the case in a dwarf-trained tree of this useful early variety which was planted by mistake against a north wall, the gumming being so bad as to give a severe check to the growth and endanger the life of the tree. It was this particular example which convinced me that gumming sometimes proceeds from the effects of cold. The effect of canker is far more serious, sometimes killing a tree outright, and always destroying the branch which

it attacks. This, to my surprise, has been my experience of it with the Kentish preserving Cherry, several trees having suffered severely from its ravages. I may add that the soil in which they are planted cannot be termed a bad one for the Cherry, as the greater number of some thirty varieties are in a flourishing and perfectly satisfactory condition, and the wild Cherry attains to the size and bulk of a timber tree in the adjoining woods.—EDWARD LUCKHURST.

FLOWER CLASSES.

My remarks are chiefly confined to the queen of flowers—the Rose, but I think they are equally applicable to most of the flowers usually found at shows.

We know how important for the production of good blooms is a good pure atmosphere together with good soil; and yet at shows in the amateurs' classes, those who live in the vicinity of London and our other great towns have to compete with others whose Roses grow in first-rate soil surrounded by fresh country air. Now cannot we have a class or classes for exhibitors who reside within five miles of the City?

Then as to the number of blooms to be exhibited. It is but seldom that we see a less number than twenty-four varieties, and generally they are required to be in sets of three trusses of each. For those who have plenty of room and other favourable circumstances this is very well; but there are others who, like myself, would wish to see their pets on the exhibition table, but who could never hope to have seventy-two blooms in perfect condition at one time. My own Rose garden consists of a border about 80 feet long by 9 feet wide. Why cannot we have a class of ten or twelve varieties of one or two blooms each?—A WOULD-BE EXHIBITOR.

PROTECTING PEAS WHEN SOWN.

Drop the seed into benzoline and sow at once. Nothing will touch the Peas under ground or when above ground. I have just sown some British Queen Peas soaked all night in a solution of aloes. I do not believe mice will touch them. Some were sown without dressing, and as soon as they appeared were earthed-up like Potatoes. Last year this succeeded.—W. F. RADCLIFFE.

WINTERING ALTERNANTHERAS.

Since carpet bedding has become the fashion in nearly all gardens now, plants suitable for that purpose must be cultivated, and the *Alternantheras* are a class of plants that have become very popular, and deservedly so, for their dwarf habit and the beautiful shades of colour that can be produced with them in carpet or tracery bedding render them at present indispensable; but the difficulty experienced with many is the keeping of the plants in good condition through the winter, and for the benefit of your readers who have asked for advice on that point I shall relate my treatment.

Towards the end of July the plants will have made good growth, which enables us to take cuttings. These are inserted in 6-inch pots filled three parts with drainage, the remaining part with a mixture of loam, leaf soil, and a sprinkling of charcoal dust and sand. In this the cuttings are inserted thickly, each pot holding from twenty to twenty-five cuttings; they are then placed in an old Melon or Cucumber bed, first levelling the bed and covering the surface with some coal ashes, on which the pots are placed and well watered. The frames are then kept rather close and shaded during bright days, and the cuttings sprinkled when the atmosphere of the frame seems too dry, or the leaves show any signs of flagging. With this treatment the cuttings soon form roots, and air is freely admitted on fine days. On the approach of cold nights the plants are removed to the Pits stove, or any glass structure where a heat of from 60° to 70° can be commanded. Here they remain for the winter, receiving enough water to keep the soil moist until February, when I have them taken out of the cutting pots and planted about 2½ inches apart in boxes. These are then taken to the Cucumber pits, where the plants soon become established. The moist heat of these structures suits them admirably. They are afterwards placed in late vineries, where they receive more air, and eventually are hardened off in cold frames previous to planting out. With this treatment I can guarantee ninety-nine cuttings (if not more) out of the hundred. I find them do remarkably well in the boxes, and where large quantities are required they are much less trouble

than pots and take up less room. The varieties we grow here are *Alternanthera magnifica*, *A. amabilis*, *A. paronychioides*, *A. latifolia*, and *A. amena*. The last-named I find requires a little special treatment. It is necessary to have good plants of it to plant out, also to plant them thickly, for when once the plants assume their deep colour in the leaves the growth is very slow; it is likewise best to have some stove plants to place in heat to propagate from. They will grow luxuriantly and the leaves will be almost green, but I find the cuttings give far more satisfaction from these than from the high-coloured outdoor plants.

All the *Alternanthera*s are strictly speaking stove plants, and the reason of the failure we often hear of in winter is through the plants being subjected to a temperature far too low. In a temperature ranging from 60° to 70° they seem at home and comfortable.—*J. ANDERSON, Hill Grove.*

BEEES IN FRUIT CULTURE.

THE last (third) report of the Vermont Board of Agriculture, Manufacture, and Mining, contains a paper by James F. Crane of Bridgeport, on the relation of bees to fruit culture, in which the importance of the presence of bees as agents of fertilisation in the period of bloom is shown by numerous examples. The first of these runs as follows:—"In 1774, Count Anthony, in Bavaria, President of the Academy of Science at Munich, proved by official family records that a century earlier, when bees were kept by every tenant on the estate, fruit was abundant, whereas then, when only seven kept bees, and none of these kept more than three colonies, fruit was scarcer than ever among his tenants." The count's conclusion as to cause may or may not have been right; but it raises the practical question whether there is not also a relative decline in bee-keeping in the United States as compared with the great increase in fruit-growing and attempts at fruit-growing. There has been, we think, a marked decline in the "setting" of fruit, which all have attributed to weakened trees, cold rains, &c.; but it is worth considering whether the lack of the "little busy bee" is not also a cause of barrenness.

Our only way of ascertaining the relative progress of fruit culture and bee culture is by reference to the census, and that gives us the following figures:—

	Val. Orchard Products.	Wax. lbs.	Honey. lbs.
1840 ..	\$ 126,756	29,173	..
1850 ..	446,049	..	..
1860 ..	1,126,128	56,730	1,846,803
1870 ..	8,571,789	46,262	1,547,178

This would indicate a much smaller increase of bees than of fruit trees and Vines. In thirty years the value of orchard fruit has increased thirtyfold, while the products of bees have hardly doubled. Each bee may be said to have fifteen times as many fruit blossoms to visit as the old-fashioned hummers of 1840; and the fertilisation may be done with corresponding imperfection, especially in a time of cold rains with little sunshine.

Again, it is to be considered that cold winters destroy bees as well as injure fruit trees, and that consequently, in the years following a winter of intense cold, there are a less number of bees to act as conveyers of pollen from flower to flower as well as, it may be, a greater need of fertilisation in enfeebled blossoms.—(*Prairie Farmer.*)

MYOSOTIS DISSITIFLORA.

MUCH praise has been justly bestowed on this very beautiful spring flower. A bed of it is indeed charming, and its utility for indoor decoration is highly valued by all who have grown it for this purpose. Your correspondent on page 34 has not in the least exaggerated its merits; but I now write to say that I have succeeded in raising from *Myosotis dissitiflora* a seedling far exceeding its parent in beauty. The flowers are larger, many of them being more than half an inch in diameter. The segments are broader, giving the flowers a very compact and rounded appearance, while the colour is quite equal to that of its parent. I found my first plant last spring in a bed of *M. dissitiflora*. I immediately raised the plant, and by the month of October it had grown 1½ foot across, having blossomed and seeded freely. I have now some portions of the plant in pots flowering freely in a cool orchard house. The seedlings of the above plant are also flowering, the flowers of these being somewhat larger than those of the parent plant, which I attribute to the greater vigour of the seedlings. The plants

are grown in loam and leaf soil without any manure whatever. I send herewith a specimen for your inspection. The original plants of *Myosotis dissitiflora* from which the seed of this variety was saved were grown in company with others of *M. grandiflora* in the vicinity of an apiary.—*W. GROVES, Shortlands, Kent.*

[The flowers are fully as large as represented by our correspondent; it is a promising variety of a popular flower.—*Eda.*]

PEACH FORCING.—No. 8.

THINNING.—No other fruit exhibits in so marked a degree the effect of overcropping as does the Peach. With a redundancy of blossom the setting of the fruit is much less certain than with a fair number of bold healthy blossoms, or if many blossoms set few well larger than peas before dropping, or they collapse when commencing stoning, and while, if too many remain for ripening, the fruit is small, having little flesh, not much juice, and next to no flavour.

The effect of overcropping is not, unfortunately, confined to the present crop, but its direful influence is felt in the next season's result. A tree carrying a heavy crop makes very little growth, and so much of it is appropriated to the maintenance of the present crop that the growths for affording the crop of the succeeding year are ill-nourished, and the buds do not attain full development, consequently many of the blossoms are small and imperfect, dropping without first casting the petals, which is not the case with perfect flowers.

Judicious and early thinning can hardly be too strongly insisted on. It is very pleasing to see a tree studded with young swelling fruit, but it does not always occur to the observer that if two fruits are left where only one ought to be, is diminishing the size and quality of the latter by half. Some have so great a dread of the fruit being cast at stoning time that they leave two fruits where they only intend to allow one to ripen, resulting not infrequently in both dropping, and just as frequently in both remaining. The changes are not on that account equal, for most fruits pass the stoning safely when the crop is thin, therefore with a fair crop we may safely conclude that we shall have no difficulty in effecting their stoning, and I should like to know if we allow but one fruit in place of two to grow until stoning if that fruit will not be much larger at stoning and have a better chance of being finer than had we allowed two to remain?

After the fruit is the size of horse beans thinning should commence. The trees being furnished with shoots upon the branches a foot apart we may safely reduce the number of fruits to two on each branchlet, and even so early we must see to the position of those retained with regard to their having room for attaining their ripened proportions without coming into contact with the trellis or branches adjoining, and if possible have the fruit so disposed that it be equally exposed to light on all sides. When the fruit is the size of a small walnut we may take off the smallest, ill-shaped, and badly disposed of the two fruits left upon each shoot for stoning and ripening. What if a few are lost in stoning; those remaining will be all the finer, and the certainty of future crops be better insured.

No Peach of the large kinds, as *Noblesse*, *Grosse Mignonne*, &c., ought to have less than 1 square foot of surface—that is, 1 square foot of supporting foliage. It is not always practicable to have the fruit just where it is wanted; it will suffice if one fruit be taken for every foot of trellis occupied, and if more fruit must be left upon a part of the tree to make up a deficiency in another it is desirable to apportion the extra fruit to a vigorous part of the tree; or in case of there being much fruit where the growths are weak, rather than weaken it still more by allowing a superfluity to make up the deficiency of other parts (and those frequently the strongest), thin the fruit to a foot distance apart, and let the other parts take care of themselves. The medium-sized Peaches may be left 9 inches apart. Some may consider the distance too great; my experience points the contrary. If there be one thing more than another to be guarded against in gardening it is that of too great expectancy in the capability of trees for producing fruit. Prodigious crops generally mean inferior quality.

Nectarines are small as compared with Peaches, and usually set more freely, nor are they thinned to anything like the same extent as Peaches. Such Nectarines as *Albert Victor* require to be thinned the same distance as the large-sized Peaches, and such sorts as *Elruge* ought to have 1 square foot of surface; none, however small, should have less than 81 square inches of supporting foliage surface, the fruit being 9 inches apart.

I would caution any with very vigorous trees from thinking that because the foliage is large twice as many fruit may be left upon them as on those less vigorous yet well furnished. Results do not justify such expectancy. Vigorous trees are frequently disappointing.

TRAINING.—When the shoots are 3 to 6 inches in length tying-in should commence, for if left until of greater length they cannot be brought into proper form. Either the shoot will snap off at its junction with its parent, or a very ungainly bend be formed. This work of tying the shoots ought to be done with care, leaving plenty of room for the swelling of the shoot. Care should also be taken in not having the tie very near the point of the shoot, or injury may result. All ties should be loose, the trees being often gone over for the regulation of the shoots. Nothing answers so well for tying either main branches or shoots as raffia or Chinese grass.

Some of the leaves will overhang the fruit, and where they do the fruit will be very highly coloured on the sun or exposed side, and very pale or not coloured at all beneath the leaves. The leaves in this case must be placed gently clear of the fruit when it takes the last swell after stoning, or even cutting away the parts overhanging the fruit. It is of more importance that the foliage have plenty of light and air than that the fruit be fully exposed to the sun.

MANURING.—Top-dressings are of importance. Nothing answers so well as fresh sheep droppings, giving the border a covering half an inch thick when the fruit is not much larger than a cob nut, or fresh cow dung answers nearly as well. It is surprising what a potency these stimulants have in bringing the roots to the surface, and the leaves by their deeper green soon show how they are being catered for. The effluvia given off is not pleasant to red spider. If the appearance of the manure is objected to it is easy to sprinkle it over with soil. Guano spread on the soil, just enough to yellow the surface, every time the border is watered I have found nearly as good as cow dung, &c.; but after the stoning a mulch of some kind is desirable, a covering 1 to 2 inches thick of short manure being valuable. Wood ashes are also a good application, but they are best applied at the dressing preparatory to forcing. Soot may be mentioned as very nearly equal to guano, and equally useful in the prevention of red spider. The surface may be made black at each watering, and the soot be washed in.

DISEASES.—Gumming is the most prevalent and arises from two causes—namely, too rich soil and damage to the branches and shoots. The first promotes long sappy growths which usually encumber to gum. It may be subdued by restraining the growth, which, however, is usually arrested as the border becomes solidified. The gumming consequent of too close tying suggests its own remedy, and bruising the shoots against the wires is equally inexcusable: in fact, nothing short of maltreatment will cause the gumming of forced Peach trees.

INSECTS.—The most insidious is the red spider (*Acarus telarius*). It is alleged that syringing prevents its attack. Experience tells nothing of the kind, for it we are very careful in applying the water without much force the red-coated fellow not only manages to maintain its footing but increases. The syringing must be thorough—the water driven with such force as to dislodge the enemy. It should, however, not be forgotten that a tree not duly attended to with water and otherwise ill fed at the roots is more liable to attacks of red spider than one well nourished both at the roots and at top by atmospheric moisture. When syringing cannot be done we must have recourse to the sulphur remedy. Sulphur commences to vaporise at a temperature of 165° to 170°. Upon an attack of red spider the pipes should be heated to a temperature hotter than the hand can bear and kept hot for at least six hours, being coated with sulphur brought to the consistency of thin paint, the house being closed. Gum water, 4 ozs. of gum arabic to a gallon of water, is best for mixing the sulphur. In the morning a thorough syringing may be given to the trees.

None of the insecticides are more fatal to red spider than softsoap solutions, 2 ozs. to a gallon of water, it being applied so as to thoroughly wet both the under as well as upper surface of the leaves. It is not, however, desirable to apply it after the fruit commences ripening.

Scale (*Coccus testudo*) is very troublesome and spreads rapidly, but, due regard having been paid to winter dressing, it does not make very great progress until the crop is ripe. Sometimes, however, it must be proceeded against. Six ounces of soft soap and a wineglassful of spirits of turpentine, mixed thoroughly, and added to three gallons of water at a tempera-

ture of 140°, applying with a syringe at a temperature of 120°, is the best remedy. This must not be applied until the leaves are full-sized and are firm in texture. Repeat if necessary.

Aphis, especially *A. persica*, takes greedily to the young wood, the flower, and tender leaves, and is as active in winter and spring as during the summer growth of the trees. It yields to fumigation with tobacco. To save fumigation the parts infested may be dressed with tobacco water—an effectual remedy, and upon its first appearance is easily applied with a brush; whereas if left the aphis spreads rapidly and will considerably disfigure the current growth, and is then not readily destroyed. Winter dressing of the trees with sulphur, &c., is a good preventive of this pest.

Thrips are best destroyed by fumigation, also the green aphis, which is not infrequent in cool houses.

Blisters do not prevail among forced Peach trees, but is common to trees against walls, being due to cold. Fungus is a result, not the cause of blister.

Mildew I have only once noticed in a forced Peach house, and that was upon the fruit of Early York. It succumbs to dusting with flowers of sulphur.—G. ABBEY.

DOUBLE PRIMULAS AT BURGHEY.

GLADLY DO I bear testimony to the excellence of the Primulas to which Mr. Gilbert alludes in page 189. They are indeed very fine—infinately superior to any others that I have seen. A saucer full of blooms sent me by Mr. Gilbert is beside me on my desk as I write. I literally feast my eye upon them. Ah! why did he not send cuttings? Tantalus! Tantalus! History repeats itself. Undoubtedly your longing for the hanging fruit closely resembled mine for the absent cuttings. A description of the blooms will best serve to explain why I thus covet my neighbour's possessions. In colour they range from a deep pink upwards to pure white, the gradations of shades being developed in the most charming manner, some being quite suffused with pink, others bearing most delicate tints and shades of the same colour upon a white ground, and others bearing innumerable spots and pencillings of pink. In size and form they are equally remarkable, many of them measuring nearly 2 inches in diameter, and all are as double as Daisies, but from their large size remind one more of a double *Petunia* than a *Daisy*. The petals are of great substance, large, beautifully fringed, and disposed in pleasing but by no means formal order, rising to a common centre, and imparting a full globular outline to the bloom. Who would not like to grow some? and who is there that does not sympathise with me in my longing for cuttings?—E. LUCKHURST.

ROYAL HORTICULTURAL SOCIETY.

HAVING reason to know from conversation with numerous amateurs and others that the lengthened correspondence which has recently appeared in the newspapers has tended only still further to mystify the public, and consequently to injure the Society even more than was previously the case, I venture to ask the favour of space in your paper that I may briefly draw attention to the following facts, hoping thereby to remove the doubts of many who will then be willing to come forward and aid by their subscriptions a Society which has done in the past, and is still doing, much valuable work.

1. The Society is now financially in a better position than it has been for several years past; but its income is still most inadequate, and with additional aid it would be better able to carry on its experiments and maintain the efficient working of those Committees whose labours have proved so beneficial to the general public.

2. Besides other valuable work, competitive trials of great scientific and practical value have for years been carried on, and are still being continued at Chiswick with the most excellent results, whilst the reports in the horticultural papers are a sufficient testimony to the thoroughly successful working of the Scientific, Fruit, and Floral Committees connected with the Society. The fortnightly flower shows are also a great success even beyond the most sanguine expectations.

3. What is now required is to obtain an increase of Fellows and members, and I think it cannot be too widely known that those who wish to join the Society can do so on the following terms:—

A. By payment of one guinea per annum, which payment entitles the member to use the gardens at all times, including all shows, fêtes, conservazioni, and promenades both at

Chiswick and at South Kensington, but without giving a vote at the meetings of the Society.

b. By payment of two guineas a-year, which entitles the Fellow to one yearly transferable ticket, admitting the bearer every day, and to all shows, fêtes, conversazioni, and promenades both at Chiswick and South Kensington, enabling him also to visit the shows at an earlier hour than the general public; entitling also the bearer with two friends to visit the gardens on all ordinary days, to receive forty orders giving free admission to promenades on all days except show and special days, and to have the right of voting at all meetings, besides other minor privileges.

c. By payment of four guineas a-year, which entitles the Fellow to two yearly tickets, both of which are transferable, and which give the bearers admission every day, and to all shows, fêtes, conversazioni, and promenades both at Chiswick and South Kensington, to visit the shows at an earlier hour than the general public, to receive forty orders giving free admission to promenades and all days excepting show and special day, the right of voting at all meetings, free admission to the reading-room, besides many other minor privileges.

d. *Bona fide* head gardeners on payment of 10s. 6d. per annum are admitted as members with the same privileges as those amateurs who pay one guinea per annum.

e. There is now no entrance fee, and anyone subscribing is in no way liable for any amount beyond the subscription for the year.

I am surely not too sanguine in expressing the hope that throughout Great Britain where the love of flowers is so universal, there are many who will be willing to come forward, and at so small a cost to themselves, to assist in supporting a Society which has done so much good in the past, and which I feel confident must with efficient aid have a very brilliant future. I venture to appeal on its behalf for such support, and shall gladly receive the names of any who are willing to become members, and I shall also be happy to obtain the necessary signatures to the nomination papers, so as to save as much trouble as possible as regards election, &c.—HARRY J. VEITCH, *Royal Exotic Nursery, Chelsea, S.W.*

NEW BOOK.

Cultivated Plants, their Propagation and Improvement. By F. W. BRIBDGE.

This is a trustworthy volume, for the author is a practical as well as scientific cultivator of plants. The first sentence in the preface is:—

“The late Dr. Lindley, when preparing the preface for his father’s ‘*Guide to the Orchard*,’ wrote the following:—‘There are two great considerations to which it is above all things necessary that the attention of the cultivator should be directed—namely, amelioration and propagation;’ and with this object in view the present handbook has been prepared.”

And the object has been well kept in view. Two brief extracts will enable our readers to judge of the contents of the work:—

“The known cases where the immediate action of foreign pollen on the fruit has been noted are so concisely given in Professor Dyer’s translation of Maximowicz’s paper cited above, that I gladly avail myself of the following quotation, which summarises the whole matter—with references to the original papers:—

“The few instances which may be found collected in Gaertner or Darwin. Thos. Maxx asserts that he observed different kinds of fruit on the Pear tree, of which a number of blossoms had been castrated, and, as he supposed, fertilised afterwards by neighbouring trees.

“Davis maintained that the fruit of Apples, Melons, and Maize underwent alteration in form, colour, and special qualities when they were planted near other kinds. Bradley even says that he had seen an Apple which was sweet on one side and sour on the other, and one half of which became soft when boiled, while the other remained hard. But these are only observations, and not experimental results. Wiegmann first obtained the latter in Pess. Gaertner tested experimentally many of the statements which we have quoted, and made experiments on other plants besides. He was only able, however, to confirm Wiegmann’s results to a certain extent. He is therefore disposed (and with much reason) to attribute the majority of such cases to variation in the individual; he allows, however, as a rare exception, the possibility of change even in the mother plant itself. Other observers (as, for example, Knight, and recently even Nägeli) deny even the possibility of such an influence.

“More recently Darwin has again quoted cases where, by crossing yellow and dark Maize, cobs were produced which con-

tained both yellow and dark grains. Hildebrand confirms these observations, and further cites the instance of an Apple which bore traces in its marking of the influence of another sort. But whilst the question has been in these cases only a variation in the colour, in the three which follow we find it affecting the form. Hildebrand has seen on Solanum edule (the well known Egg plant) a fruit which in colour, size, and shape exactly resembled a Tomato, and possessed only the greater dryness and firmness of the flesh of the Egg fruit, besides the smooth border of the seed, which in the Tomato is villous. Dr. Kanitz met with a case of a hybrid fruit between Lycopersicon esculentum and Capsicum annuum. Fritz Müller fertilised *Cattleya Leopoldi* by *Epidendrum cinnabarinum*, and obtained seeds of the former with the shape belonging to the latter. Meehan, lastly, observed that the bough of a Pear tree, which had always been altogether unfruitful, projected into the boughs of a neighbouring Apple tree. Fruits were produced which in skin, flesh, and other respects were altogether Apples, and had only the seeds, carpellary partitions, and stalk of the Pear.”

NOTES ON VILLA AND SUBURBAN GARDENING.

KITCHEN GARDEN.

The present is a capital time for making new beds for Asparagus, and the way to make them very much depends upon the position and nature of the soil as well as the time the beds are to remain, for, if the roots are to be taken-up in a few years for forcing, less trouble in preparing the soil suffices than when the beds are to remain till the plants are worn out. In consequence of frosty nights it is not advisable to rake-down the old beds too soon or too smoothly, but the surface may be loosened with the hoe, and the dressing-down will afterwards be easier done. The soil among growing crops should be loosened somewhat deeply, but not made very fine yet; the slight frosts will do the soil much good.

Take care that seedlings of Cauliflower, Lettuce, and Cabbage sown in frames are pricked-out in good time, as by leaving them too long they become leggy and are seldom afterwards so robust as if better treated. Carrots in frames ought to be thinned-out and plenty of air given to keep them dwarf. Those which are appearing outdoors should be protected from frost, and quicklime laid round the bed will keep slugs away, which might otherwise eat-off hundreds in a night. Lettuces which have been standing under the shelter of walls all the winter should be encouraged to grow by stirring the soil amongst them, and if they are too thick let some be taken away and planted in rich soil.

Parsley is a necessary article in all gardens, and to have good plants the seed should be sown early on a border; and then, if a piece of ground is prepared by deep digging and manuring, the best and most curled of the plants when large enough may be planted, and they get so well established during the autumn as to stand the winter well with the aid of a little protection, such as a slight framework covered with mats on frosty nights. Cauliflowers from hand-lights should be planted in well-prepared ground, the plants being carefully lifted with a trowel, with some earth attached to the roots. They should be planted 2 feet apart.

FLOWER GARDEN.

Calceolarias which have been wintered in frames should be temporarily planted in some good soil, where they can be protected. The difficulty will soon be to find room for all the flower-garden plants, and every available space will have to be turned to good account. Many plants may be propagated in the spring, and the plants thus raised go on necked and flower as well or better than the autumn-struck plants. Old plants of *Alternanthera* if placed in a December frame in March soon begin growing, and as soon as possible the cuttings are taken off and inserted thickly in pots, and they strike readily in a well-heated frame. If another frame can be prepared with a bed of leaves, and raised up to within a foot of the glass, and having a few inches of good soil on the bed, the plants pricked out in this and well attended to will grow in fine condition for bedding-out in June. If no frame can be spared the plants may be grown in boxes in a house, but are likely to be drawn up weakly. Cuttings may be taken from the old, also the young plants, until sufficient plants are established.

Lawns should be cleaned, rolled, and then mown as close as possible so as to cut off the old tough grass. The edges next the walks must now be cut, and all beds and borders be made neat and clean. Run the hoe among spring-flowering plants, such as beds of hardy annuals. All hardy digging plants may be put out where they are intended to remain, and all newly-planted shrubs should be mulched, and protected by being staked. —THOMAS RECORD.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

For the last ten days we have had drying winds, and where

the ground has been forked over it is in excellent order for sowing seeds, planting Potatoes, &c.

We have now sown the first *Celery* on a warm border. We have sown at a much earlier date in former years, and have had plants ready to prick out by this time; but so many "bolted" that they had to be replaced with later-sown plants. The running of early *Celery* is owing in a great measure to our dry hot soil, combined with a rather dry atmosphere, as in cooler districts with a different soil the bolting of early-sown plants does not happen. To show the difference that soil and situation makes in *Celery* culture, the following quotation from the writings of the late Mr. R. Fish will be appropriate:—"We generally sow *Celery* twice or thrice, but we confess we do this more from custom than from any absolute necessity. The general idea has been that small plants which are pricked-off into a little heat in the middle of March are sure to throw up their flower stalks in July, August, and later, whilst plants from seed subsequently sown and fit to be pricked-off in April and May are comparatively safe from bolting. The result of our experience and observation is, that plants properly looked after, the roots kept from being dried-up, &c., and which are pricked-off in March, are just as safe from bolting as those pricked-off two months later. The soil and climate at Puttbridgebury must have been quite different from ours at Puttbridge, as with all our care, if the plants are raised and pricked-off in frames, they are almost sure to bolt.

We have planted out a sufficient quantity of autumn-sown Onions; although a breadth of Onions is always sown in spring the crop is uncertain on account of the attacks of the Onion maggot, while the autumn-sown crop never fails from this cause, or indeed any other. Carrots have been sown in soil that has been trenched. On several occasions, though not always, a healthy crop has been secured when the top soil has been turned down to the depth of a foot. Water slightly diluted with paraffin has been suggested as a remedy for the small maggot that eats into the Carrot and destroys its tap root. We shall give it a trial, as our Carrot crop often suffers, and sometimes entirely fails. See that all crops are put into the ground while the weather is favourable.

Jerusalem Artichokes may be planted in a corner where they will not overshadow other crops. They will thrive almost in any position; but good roots are only produced in rich soil, and the plants should be 3 feet apart one way and 1 foot the other. The soil should be deep.

If it is intended to plant Asparagus beds the ground should be prepared by deep trenching, and plenty of good manure is necessary. One year-old plants are the best, and by the time they have grown an inch or so out of the ground the beds should be in good condition to receive them. The best time to plant them out is when they have commenced growing; but if the plants have to be sent a distance this will not be possible, the young growths being so easily snapped off.

On a dry sheltered border a sowing may be made of Dwarf Kidney Beans, even if there is no glass protection to place over them; the wire Pea protectors may be used, and some shading thrown over; but good roots are never made, and before this appears in print the Potatoes will be planted out for the earliest crops. They will be carefully transplanted from the shallow boxes in which they were laid thickly a month ago. We have not yet tried Fenn's Early Market, but shall do so this season; it is said to be one of the very best early round garden sorts.

VINERIES.

The Vines in the earliest houses were started a week or two sooner than usual, but they are not any earlier on that account. It was seen that the Vines would not start regularly when pushed with too much heat, and we withheld it until the buds were advanced a few inches. A good portion of the bunches are thinned out, and the remainder will be finished in a week or ten days. Black Hamper, Buckland Sweetwater, and other free-setting sorts may be thinned nine or ten days after the first flowers open on the bunches. *Muscata* takes longer, as they generally do not set well, so it is better to wait until it can be seen which berries are likely to swell freely before the remainder are cut out.

Thinning Grapes is an operation that requires considerable care; it ought not to be done in a hurried manner, nor when the operator is in a state of perspiration. By a little management it can be done early in the morning. In sunny weather the sun has considerable effect on the glass, and the temperature may rise 10° or 15° before 10 A.M. In such weather we never thin after eight in the morning. Should the weather happen to be cold with no sun the operation may be continued all day. The berries that are to remain should neither be touched by the hand nor the scissors, and no second thinning ought to be made. The person that is to thin the Grapes should have some knowledge of the previous year's crop, as this is a guide as to the number of berries that ought to remain. In a house even in the same garden, the berries on one Vine of the same variety will

be as large again as they are on another. Some bunches are more loosely formed than others, but the man of experience speedily takes note of his bunch and acts accordingly.

We may expect keen cutting winds from the north-east for a month or six weeks yet, and at such a time, when the skin of the berries are most liable to injury, air must be applied with very great caution. The ventilators ought to be so arranged that the wind cannot blow directly on the berries.

CUCUMBERS AND MELONS.

Cucumbers in frames will now do tolerably well if the heat is kept up by linings, and if great care is taken to ventilate the frames so that the plants are not exposed directly to cold winds. The sun has a strong effect on the glass and soon increases the temperature. Advantage should be taken of this to close the lights early in the afternoon, and to cover with mats at 6 P.M., using them double when there is any sign of frost. When the roots have permeated the hills more good loam ought to be added, but not a large quantity at one time, as this prevents the heat rising. Our early plants in the houses where the night temperature ranges from 65° to 70° make good progress. After a dull period when the sun breaks through strongly the leaves are apt to suffer, but with as much air admitted as possible, and sufficient moisture in the atmosphere, no injury has been done to the plants except the scorching of a stray leaf or two. We do not like to shade them, as if we start with this it is not easy to leave it off again. It is better not to shade either Cucumbers or Melons. The last-named require very similar treatment to that of Cucumbers, 65° at night, but rather higher; and if it is not requisite to hurry the fruit in by a certain time we would keep the house at 60° only, as a high night temperature is likely to cause an inroad of red spider. Train the lateral growths from a central leader in the same way as Vine shoots, and they ought not to be too much crowded. Some varieties of Melons form growths much more thickly than others, and require to be treated accordingly.

PEACH HOUSE.

If the fruit is set in the late house more atmospheric moisture may be provided, but we do not like to have so much moisture in these houses as in vinerias. All that will be necessary as yet is to syringe the trees in the morning, and also at 3 P.M. if the weather is fine. In dull cold weather the borders and paths only should be sprinkled. The night temperature need not be higher than 55°, a high temperature may cause the fruit to drop off. Another fertile cause of this is the inside borders being too dry. When the roots are out as well as inside there is not so much danger from this cause. Our trees in pots are saturated with water during the winter, and sometimes until the blossoms are nearly open, and yet they set well. We have not tried keeping the roots dry, and would be afraid to do so.

GREENHOUSE AND CONSERVATORY.

We have been engaged amongst the Hyacinths preparing them for exhibition, and also for making a better effect in the show house. Hyacinths always require the spikes to be supported, and it ought to be done so that the supports are not seen at all. The best support is a wire bent at the part that enters the pot so as to avoid the bulb. Some growers force a wire through the bulb, but this practice is too barbarous, nor is it necessary. The wire must be worked carefully in amongst the bells without bruising them, and they must be carefully arranged so as to form a symmetrical spike; when the bells are too thickly placed, as they are sometimes, we thin them out with a pair of sharp-pointed scissors. When the plants are shaded from the sun and kept cool the flowers will last a full month from the time they first open. For the decoration of the home stage Tulips are very useful, their gorgeous appearance and the rich variety of colour render them always attractive. A few *Polyantha Narcissus* also afford agreeable variety.

We keep a careful look-out for red spider and mildew, and have it destroyed on its first appearance. The spider insidiously attacks *Pineales*, and must be destroyed by laying the plants on their sides and syringing them well. *Chrysanthemum* have been potted out of their cutting pots, and the plants placed in a house where they can be started into growth. In a week or two they will be placed out of doors, and be protected from severe frosts with mats or thick shading material.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Henry Walton, Edge Hill Nurseries, Brierfield, Burnley, Lancashire.—*General Plant Catalogue.*

Ellwanger & Barry, Mount Hope Nurseries, Rochester, N.Y.—*Descriptive Catalogue of Roses.*

R. Edwards & Sons, Moss Spring Nurseries, Nuthall, Nottingham.—*Descriptive Catalogue of Dahlias.*

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoid-

ably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

PETUNIAS.—In the article on Petunias, page 173, the illustration of a double-flowered variety represents the strain of Mr. Ernest Bonary, Erfurt, Germany.

TENANT LEAVING (*Servant*).—We must decline giving an opinion. The most straightforward course would be to speak to your landlord and make an equitable arrangement with him.

NEFFLEE DU JAPON (*M. R. D.*).—It is the *Mespilus japonica*, or Japanese Medlar.

GOLDEN PYRETHRUM FOR CARPET BEDDING (*A. F.*).—The seeds are generally sown too early, and the plants are too large when planted in the beds. Do not sow until the middle of April, and prick the seedlings direct from the pans into the beds where they are required to remain. They should be quite small, only just large enough to be handled when placed in the beds in May, pricking them only once each apart. You can afterwards thin them out as required. The only means of keeping the plants dwarf in by sowing late and planting the seedlings closely together when they are quite small. If other and still dwarfier plants are associated with the Pyrethrum the pensel intended for the latter should be excavated an inch or two, and then with a little pinching the Golden Feather will not "overtop" the other plants.

MEALY BIOC (*T. S. Knowle*).—Your plant is infested with *Cocco* acanthi. Your remedy is to dissolve 4 oz. of soft soap in a gallon of water, and thoroughly wash every portion of your plant with a sponge, applying the solution as hot as can be endured by the hand, then lay your plant on a mat and syringe it violently with the same solution at a temperature of 120°. It should afterwards be syringed twice daily with clear water to prevent the soap from injuring the plant. The insects will gradually die away, but will prevent the increase of these insects, but they cannot flourish under regular drenchings from the syringe.

APPLES (*J. M.*).—In your situation, Surrey, plant—*Apples, Desert—Joanathan, Devonshire Quarrenden, King of the Pippins, Korry Pippin, Golden Rein, Cox's Orange Pippin, Margil, Aromatic Bassac, Cornish Gilliflower, Nonpareil, Court Ponde Plat, and Strømmer Pippin. Kitchen—Garbide Collin, Strixing Castle, Nonesech, Golden Noble, Hollandyard, Beauty of Kent, Blenheim Pippin, Alfriston, Winter Greening and Norfolk Beeding.*

PRIMULA FLOWERS (*J. R. Cotton*).—They are most peculiarly variegated, but whether they are handsome when growing we cannot judge.

HEATING BY A BAKER'S OVEN (*C. F. E.*).—Water will flow without being at a boiling temperature. The oven on which you propose placing the boiler will not be hot when you require the water to be at a boiling temperature.

TREATMENT OF AMARYLLIS AFTER FLOWERING (*E. P.*).—To leave off watering and to crowd the pots together into any out-of-the-way corner immediately after the flowers fade, as is frequently done, is bad practice. It should never be forgotten that a full and healthy development of the foliage is of the utmost consequence, for without it we shall look in vain for good flowers, and no subsequent treatment will atone for negligence or carelessness in this respect. Continue therefore to afford the plants every advantage of light, air, and water till the foliage has attained its full growth and shows indications of decay, then gradually withhold water; and when the foliage is yellow has shown clearly that its tissues have again done their work well, and that the pot is ready to be taken up, and the surface, if necessary, let it be done just before the season for a new growth, using a rich gritty loam.

ARBUTUS BARESE (*Constance*).—The *Arbutus* is dioecious, the male and female flowers being produced on separate shrubs. Plant a male plant among your shrubs. Any nurseryman could supply you with one.

SALT TO KILL MOSS (*J. M.*).—Take the lawn, and sow over it common salt, at the rate of twenty bushels per acre. Apply it now. If your lawn is on a heavy soil draining would permanently diminish the moss.

WIREWORM (*Signal*).—We know of no radical cure, except paring and burning 6 inches of the entire surface soil.

NITRATE OF SODA (*Idem*).—It is a good manure for Potatoes, 1 lb. per square rod, sown over the surface immediately after planting.

CABBAGE ROOTS KNOWNED (*A. A.*).—The grubs in the knobs are the offspring of a weevil. The only preventive is to dip the plants at planting time into a strong manure and to keep it on the surface after planting.

RHUBARB NOT GROWING (*C. E.*).—We are unable to account for the Rhubarb not growing; the kind may have been unsuitable for forcing. We have had late kinds taken up early decay at the crowns, and not unfrequently had the crowns eaten out by mice. There is nothing wrong in your treatment, but it is not desirable to water until the leaves are appearing from the crown, growth having taken place in the crown, half a part of leaf soil, and half a part in equal proportions of silver sand, pieces of charcoal, and old dry cow dung well incorporated will grow *Stations* well. Good drainage must be provided. None of the *Stations* require a hot-house, but those not hardy should be grown in a greenhouse temperature.

GREEN SLIPPER (*W. H. P.*).—Wishes to know how he can prevent a green slime forming and floating in his water tanks.

SUMMER HOUSE (*J. Rogers*).—We cannot furnish designs. Ricanti's book, "Sketches for Rustic Work" might help you. It is published by Mr. Carpenter.

PEACH, MELON, AND PROPAGATING HOUSE (*G. C. H.*).—Your lean-to house ought at least to be 12 feet wide, which will allow 4 feet at the back wall for a Peach border, 2 feet 6 inches for path, and 4 feet for a bed to be supplied with bottom bed from hot-water pipes. The front 2 feet for Melons should admit of a depth of 18 inches for loam; the front 2 feet space between the path and Melon bed will be further reduced 4½ inches to allow of a low wall one brick thick to support the bed; this may be 30 inches or 3 feet above the floor line to be used for a propagating bed; this you can fill with soil, fermenting manure, or leaves.

BETONY PROPAGATION (*E. C. O.*).—It is best propagated by sowing the berries, which should be gathered in late summer or when they become quite red, sowing in sand over the winter and sowing in March in light sandy soil in the open ground, covering about half an inch deep. It may also be increased by suckers, either with or without a portion of the fleshy roots. You will be able to find the roots by tracing the vines in the hedges where the plants grow. It will not be long, however, before larger bins come up, and before the growth is far advanced the vines should be removed.

CONVERTING GREENHOUSE INTO A VINEY (*C. C. M.*).—It will be necessary to remove the front pipes, bringing them 3 feet further into the interior of the house. The pipes at the back are as good as they can be, unless you wish to have something growing against the wall, in which case the pipes will not be brought 2 feet from it. We should not now divide the house into two by a division in the middle, at least arrange the pipes for it so that you can heat one house or both, separately or together. In the early house we should have Mill Hill Hamburg, Foster's Seeling, Troveren Frontignan (Muscat Troveren), and Troughton Black. In the second house Golden Queen, Madresfield Court, Muscat of Alexandria, and Lady Downe's. You may plant in the order named, commencing at one end, and put in the division afterwards. We should not have any Peaches in the house, the vines would soon shade them too much to be profitable. Our "Vine Manual" treats of the preparation of the soil and cultivation. It may be had from our office for 1s. 6d.

NAME OF VIOLET (*Subscriber*).—Judging from the flowers alone (foliage would have aided us in the more certain identification of the variety) we think it is the double red (reddish purple) variety of the Russian—viz., *Viola saviæ rubra flore-plena*, a very free-flowering kind, and good for pot culture. The flowers set are very attractive.

BEST FOR BRONCHITIS PROPAGANDA (*Beale*).—The two small leaves set were much withheld. The colour appears to be rich magenta with red veins; but matured plants are necessary to see a correct judgment being formed on the merits of the strain.

POULTRY, BEE, AND PIGEON CHRONICLE.

WESTMINSTER AQUARIUM POULTRY SHOW.

The management of the Westminster Aquarium Poultry Show has been rather sharply criticised. In justice to the executive of that Show I send you my experience of their management.

I am one of those poultry fanciers whose homes are situated "in remote and inaccessible country places." I was unable to attend the Aquarium Show, unacquainted with any of its officials, unrepresented by any person to guard my interests. On the morning of Saturday, February 24th (the Show had then been closed only a few hours), one of two birds I had exhibited arrived at Farnham station. On the same day I received a post card stating that my other bird had been claimed. Within a fortnight I received a cheque for the amount due to me, enclosed with a very ornamental highly commended card. I may mention that my bird which was returned had improved in condition during his absence. For the last eight or ten years I have been an occasional exhibitor of poultry; during that time no committee, as far as my experience goes, has behaved in a more businesslike and considerate manner to exhibitors than the gentlemen who promoted and conducted the Aquarium Show. I am sorry to hear that their venture was financially a failure. Surely they have been hardly treated in receiving such a severe censure for backwardness in the matter, especially on the opening day of the Show, the delay having been caused by circumstances beyond their control.—H. SEYMOUR FRASER.

WING DISEASE IN PIGEONS.

Are wing diseases and gont forms of the same malady? Is it infectious? My reason for thinking it must be is that until December last I had not a single case, but since then it has been going through two lots, the conditions of which are totally different, but where the occupants generally mingle during the day. Thinking it might arise, as suggested in the books, from striking the wings against some sharp corner I was careful to remove all such; but the spread of the disease has not been stopped, and I have now about a dozen birds affected with one or other of the forms of the disease. Till about a fortnight ago it was confined to the wings, but now there are several birds lame; and although there is no swelling I can only attribute it to the same disease. In two of these cases I am treating with spirits of turpentine. In the case of the wings, where there are swellings I treat with iodine, with which I have cured one; where there are no swellings I have used the cold-water tap, and in that way I have also cured one case. Most of the birds attacked are highly bred Barts, the last one which I found bad both in wing and leg

this morning being highly commended at the late Lowestoft Show; but the mongrels are not at all exempt from the disease. So thoroughly disheartening is the present state of things that, if I am only assured that the disease is not infectious, I shall sell my stock not yet attacked. My birds have, as a rule, tall limbs, and are remarkably healthy in all other respects. If the disease is infectious, what means ought I to take to disinfect the house?—E. B. T.

[We never heard of so bad a case of wing disease as in your loft. We have never thought it infectious. Perhaps as an old ship sometimes becomes the cause of disease, so your loft may have become an infecting one. Of course you have been very careful as to the water and water vessels, food, &c. Our usual mode had fatal cases, and also the reverse. In the early stage the leech seems a sensible application. Turpentine and iodine we have again and again used; but plucking the flight feathers has answered best, but that has not always been successful. As gout is believed to be a kindred complaint, turpentine and iodine are often used. We fear that there is no certain remedy, and you appear to have tried and succeeded, and failed sometimes. The strongest point as to the contagion theory is that the mongrels have had the disease, as they are usually as healthy as possible. Feeders usually are in glorious health. We are not surprised that you are disheartened. If you sell let the buyer know the circumstances, and then the responsibility is removed from your shoulders. Our own belief is that it cannot be infectious, but arises from a common cause, whatever that cause may be. It appears to us that, as showing increases and birds are higher-bred, diseases of various kinds are on the increase among Pigeons.—Eds.]

PIGEON LORE.

I THINK something might be done to trace back the introduction of some of our varieties of Pigeons if elderly (no offence intended) fanciers would exercise their memories on the subject, for several new varieties, even putting aside German Toys, have been introduced in the memory of, say, the oldest Pigeon fanciers. This new names arise in books. No writer before Dixon, who wrote the "Dovecot" in 1851, had mentioned the Archangel. Then the Magpie is a new Pigeon. Can any fancier fix the date of that bird's introduction to the fancy? At first they were said to be Tumblers, but now they are certainly doves, not Tumblers shaped. African Owls, we know all about their introduction, so also of Russian Trumpeters; but can any one tell me about White Ponters? The older books are silent as to them, mentioning only the Pied varieties. It may be replied that they are also silent about Meales and Chequers, and they are very old colours. The latter were years ago frequently bred from Blues, and though not allowed to live, yet from many a Blue strain came the objectionable Chequer. Meales—that is, the Mealy proper, the barred, were bred as a distinct race by many old fanciers who admired, and deservedly so, their colour and the fine shape which so often went with the colour, whereas Chequers were almost always dumpy and bad-shaped. Has White Ponters existed I think they would have been mentioned, because their appearance is so very attractive. We find the first pair in the year 1842. Can any fancier go further back than that date? I went on purpose to see them when a school-boy and an ardent fancier. They were tall and slender and not large-cropped, in fact very much as so many are now.

If we take the Pigeon books in course from Moore to Fulton, we find each new one mentions fresh varieties of birds. The "Treatise" some in addition to Moore, Girtton still another or two, and so on, showing us that new "sports," to use a gardener's phrase, now and then arose, or quite new sorts were imported from other and distant countries.

In regard to the Pouter, Mr. Ure of Dundee, a very accurate and thoughtful fancier, remarks, "This bird, Moore says, was originally bred by crossing the old or Dutch Cropper and Horseman together. He is no doubt a good authority, but I must confess I never could see how such a cross could produce a bird like the English Pouter. There does not appear to be a trace of the Horseman left in the modern bird, though there might have been when Moore wrote his excellent work in 1785. The Horseman could not add to the length of limb or feather, and in place of adding to the crop would tend to do away with it. The same may be said of slenderness of girth round the shoulders; but it is possible he might assist in the marking, as we frequently read of Pied Horsemen." This last is a very 'cute remark, and I have no doubt of its correctness. In confirmation of it my eye fell upon an oil painting at Hampton Court Palace bearing the date 1700, of a Horseman, probably black, with a correct half moon on his crop. Here would be one marking, and a very important and characteristic one, of the Pied Pouter, as we know.

Thus we may by the aid of an old picture sometimes come at a correct idea. I would ask fanciers to keep their eyes open

when an old picture of poultry comes in their way.—WILTSHIRE RECTOR.

FAIRLAWN.

It was not a good time for a visit, for although the day was bright and mild as so many have been this winter, yet February is not the month in which one would most willingly go on the errand I had in view; but having a few hours to spare, I was sure the visit would not be a profitless one. Well, but what is Fairlawn, and what did you go to see? am sure it will be heard more of as years roll on, for Fairlawn is the new residence where Mr. Abbot has migrated to, where he is enabled to carry on his scientific culture of bees in a manner and on a scale he has never before attempted, where he will have his school of apiculture, and from whom many a lesson will be learned by all who are interested in the "wee creatures" which for intelligence have been of late cruelly maligned.

I had visited Mr. Abbot at Hawell and had learned much from him there, and as he had removed to Southall and had spoken favourably of the change, knowing him to be a man not inclined to exaggerate, I was sure that I should find it as he had reported, but I was not at all prepared to find so complete and excellent a change. Fairlawn stands on a piece of land of about three acres, and is situated within ten minutes' walk of the Southall station of the Great Western line. The house is a handsome commodious one, and opens out into a garden well stocked with fruit trees, beyond which is a good meadow with fields stretching far away, and giving a good hunting ground for the little denizens of the garden. Round the garden were bee hives of all kinds, but, of course, Mr. Abbot's own prize bee predominating. Many were in straw skeps ready to be transferred when the weather was favourable, and Ligurians and native bees and cross-breeds were tenanted the homes, which will be a scene of busy toil by-and-by. A cursory examination of the stocks showed that they were vigorous, but feeding had not commenced, Mr. Abbot being afraid that the great forwardness of the season would be injurious to the bees if sharp frosts and cutting winds succeeded when the hives were full of brood. Passing from the garden I went to the workshop, where carpenters were busy, and frames, hives, and supers were being manufactured with great rapidity. The sectional supers are destined to take a prominent place, and will probably after a time be those only used, and these were being turned out with marvellous rapidity, and so cheaply that they will come within everybody's reach. The pieces which form the sides of the sections are cut so accurately that there is hardly a hair's breadth difference in them, and then the dovetails are punched by a machine so that these must be true, and the four sides can be put together in a minute. Mr. Abbot's own Alexandra super is a very neat and excellent one, and prevents the likelihood of the combs being made crooked. One advantage that these sectional supers have is, that the comb is made in marketable sizes, persons being likely to buy a super of 2 or 4 lbs. weight who would hesitate about encumbering themselves with one of 12 or 14 lbs. and the difficulty of selling hive stands in the way of profitable bee-keeping. No one could doubt on seeing the busy scene in the workshop that the wooden bar-frame hives are the hives of the future, and when a very decent hive suitable for all purposes of bee-keeping can be turned out for 3s. or 4s., we may hope that the almost invincible prejudice in favour of the old system may be overcome, and humane bee-keeping take its place.

I hope to see Fairlawn at a more busy bee time, but having seen it now, I thought it might interest lovers of bees to know how favourably one of their teachers is now situated for carrying out his pursuit.—D. Deal.

HIVES AND LIGURIAN BEES.

It was my intention to say no more about hives till next winter, but as one or two of your correspondents have asserted that I have thoroughly changed my front and thrown overboard all my teaching about large straw hives, I return rather reluctantly to the subject.

It was stated that straw hives possessed every quality I desired, and compassed all I wanted. Well, let that pass. "RENRÉASSUREE BEE-KEEPER" appears to be very anxious to convince bee-keepers of the great superiority of the Stewarton hives over other hives, and 300 per cent. over straw hives. I shall be gratified if he succeeds in proving his point in a satisfactory manner, for no one will profit more than myself in having the best kind of hives. Our friend is right in saying that the test of superiority should be on a common field. Nothing can be more easy and satisfactory than the placing of hives of various kinds in one garden or neighbourhood and managing them on the same principle. I shall be happy to place three or five straw stocks beside three or five of his Stewarton hives in any suitable place and comply with all reasonable conditions. I believe he has come to conclusions which are unsound and misleading, and I

sincerely hope that he will accept the challenge thus given and have the matter fairly tested. If he is right, the shortest way of gaining his end and the approval of the apiarian world is by establishing his position by a trial like the one now suggested.

If our friend succeeds in proving that the Stewarton hives are even 10 or 20 per cent. better than other hives I shall be the first to regard him as a benefactor among practical apiarians. I will this year put three or five swarms in as many straw hives, and I propose that he be pitted against three or five Stewarton hives in any part of the country. If the "RENFREWSHIRE BEE-KEEPER" will not accept the challenge, I hope some other bee-keeper will do so. The question is a very important one, and the trial now suggested, if properly carried out, will, in my opinion, do much to advance practical apiculture and end this "battle of hives." If truth is what we are all seeking nothing can be lost in the trial; indeed, nobody has anything to lose but errors and mistakes, and the sooner we lose these the better.

The hives which will be prepared here for the trial will be tenanted by common bees. The "RENFREWSHIRE BEE-KEEPER" says he has an additional advantage in possessing Italian bees. I shall not object in any way to this advantage being on his side. I have said I will comply with any reasonable conditions. I would suggest that the hives be placed side by side in the beginning of next year, and remain untouched by their owners till the end of the season. On this condition what should be done at swarming time? Let them alone: each side will share and share alike the dangers of losing swarms. All I shall do to mine will be done before they are placed in their competing position.

I shall out a wing off each of my queens. If the bees go as swarms they will return; and if the queens crawl back into their hives very little loss will be sustained. If queens be lost second swarms may be lost too. But the arrangement of supers may possibly prevent swarming, and thus make the contest one of strength. But anything and everything that will satisfy the intelligent bee-keepers of this country in such a contest will both satisfy and gratify me.

I shall also put swarms in three or five grocers' boxes, costing 2s. each, with a view to pit them against the best and most costly hives that can be produced. I much prefer straw hives for convenience and ventilation to wooden hives of any kind, but my object in proposing grocers' boxes is to let it be known that plain cheap boxes are just as good for bees and honey-gathering as costly and complicated hives.

The challenge is open for anybody to accept. If it be accepted I shall make arrangements for its being fully carried into execution, even if I be carried from this scene of action before the time comes. But someone may ask, Why not test the matter this year? and say, There is time enough yet to arrange it. I hardly think there is time enough to do it in a satisfactory way, but if it can be done I shall be glad. In making arrangements for a fair trial of strength it should be well understood whether both parties will be permitted to come into the arena of contest with hives in the best possible condition, or to have both sides fairly balanced in strength at the commencement. I think that each party should be permitted to appear on the scene of action with hives in the best possible condition.—A. PETTIGREW.

PROGRESS OF APIARIAN KNOWLEDGE.—No. 3.

HAVING gone through our experiences of recent date in regard to the progress we have made in our knowledge of bees so far as relates to the natural history of the insect, I come now to treat of progress attained in the art of managing them with a view to profit.

But first a few words must be said relative to a discovery alleged to have been made in respect to honey. A very few words will be sufficient, because, as is well known, I have taken a prominent part already in the discussion of this question, and have stated my entire incredulity with reference to it. The theory, as stated, is in substance that bees do not gather honey in the fields but a kind of crude syrup, more or less sweet it may be, but chiefly remarkable for the flavor of the article, and this is the principal thing which characterises it. It becomes honey afterwards in the hive after the bees have swallowed and disgorged it twice. The richness of the honey—its saccharine quality—is not acquired till it has been swallowed and disgorged a second time. The stomach of the bees, on this theory, so marvellously adapted to the production of sugar (which as we all know is the chief ingredient in honey), that quantities of it are annually secreted there, *multum in parvo*, ready to be developed so soon as the crude syrup of the flowers has been swallowed a second time. As no evidence has been forthcoming of a nature to satisfy a scientific mind it may be dismissed into the limbo of crude theories. Probably the remarks and evidence to the contrary recently adduced by your correspondent, "A RENFREWSHIRE BEE-KEEPER," will finally extinguish it.

Passing, then, to the subject of this paper, I must beg to differ from Mr. Howard in remarking that the art of keeping is a scarcely born. This remark is chiefly made in reference to the species of bee which is established in this country. It may

possibly be that by judicious crossing with foreign blood, or by the introduction of a new variety of bee, we may improve the breed. The introduction of the Italian Alp bee has been tried with success. It is found everywhere, having so multiplied and crossed itself with the old English bee that it is doubtful if a perfectly pure stock of the latter is now to be found in England. But what preponderating benefit has accrued from this cross or from the Italian breed in its pure state? Years ago, when Mr. Woodbury was most eager and enthusiastic on the subject of this bee, and when I was bitten with his enthusiasm and introduced the Italians into my apiary, much as I liked them (as I like them still) I could not perceive any such material superiority in the one sort over the other as to say positively that we had gained a great advantage. Others say they have seen this great advantage, and we are bound to give them credit in a matter where actual experience is attainable and no mere theory is in question.

But after all, given the best bee known, unless it be in its nature and habits a totally different honey-gatherer, it will fall under the same laws as our European bees, nor will the scientific treatment of them be different in any essential particular to that now in vogue. The same method of comb-building will be practised by the bee, the same sort of hives will be in vogue as now, as in the case of the English, Italian, Cyprian, or Egyptian bee. The latter was tried but lamentably failed owing to its vicious nature and irascible temper; and if we introduce a stinging bee how will it maintain its ground or resist aggression from our own bees with their sadly marauding propensities? Such brutes as the Cattara bees are not likely to be more popular than the Egyptian, which Mr. Woodbury was only too glad to rid himself of after its onslaught on the passers-by at Mount Radford, Exeter. A mild-tempered bee, disinclined to sting man, while ready to defend its stores at the point of its spear against its own congeners, would undoubtedly be indeed an insect of great value. I repeat, it would not alter our management of the honey bee. I am one of those, therefore, who think that we have made very great progress in this management, and that our appliances in the way of hives, supers, use of artificial pollen, methods of feeding, wintering, artificial swarming, &c., are infinitely a-head of the knowledge and practice of our forefathers in this respect, and may very well be called scientific.

To begin with the subject of hives. "Hives!" Yes, hives to be sure! in spite of the controversy on the subject which has led to what is called "the battle of the hives." Mr. Pettigrew's large well-made straw hives are greatly in advance of any such hives that were ever in use in England. No man deserves greater praise for the way in which he has led the crusade against the miserable skeps that were in use in this universal use in this country fifty years ago. They have quadrupled the quantity of honey that may be collected in any locality where they are adopted; and not only the quantity, for it may be taken as an axiom in bee-keeping, that the more space there is for the accumulation of large stores of honey in any hive, the more virgin comb of first rate quality will be harvested therein. Let us give honour to whom honour is due. Mr. Pettigrew has proved himself the cottager's friend in this respect, as well as in all the sound lessons in practical bee-keeping suitable for them, which his long experience has enabled him to give with undoubted authority. I say, then, that Mr. Pettigrew's hives are "Al," for cottagers and for all persons who are content to obtain plenty of honey. One only caution is necessary—no honey-producing districts are exactly alike. Some are very rich, others very poor. In the latter a small hive must be adopted, which can be enlarged by judicious sacking and snoring at those more favoured but rarely occurring seasons when (as last year in this locality), a fair honey harvest may be ingathered; but in all other places the larger straw hive will be found the most remunerative. It will be observed that I confine my recommendation of these large straw hives to those only who want honey and nothing more. After all, these I suppose are the legion everywhere.

But there is a numerous class who like greater precision in their management of bees. They wish to regulate the interior arrangement of the hive, to have swarming under their control in all its accidentals, to adapt the changing circumstances of the hive to their wishes—*e.g.*, to distribute comb in proportion to population, to feed easily and naturally with the least risk of life, to ascertain at any given moment the condition of their bees and to treat them accordingly; to plunder the stores, it may be, without breaking-up or weakening the stock. The man who does all this I call a scientific bee-keeper, and I think that for him the "science" of bee-keeping has of late years made very great advances. How and to what extent I will endeavour to show in another paper.—B. & W.

FORM OF HIVES.

Though the shape and form of a hive may have very little to do with the storage of honey, has it nothing to do with the pro-

duction and increase of the stock, by affording greater facilities to the queen for the deposit of eggs? Will the same queen and the same stock increase and multiply as greatly and as quickly in a hive of one kind and shape as in another? Is a hive with great width from front to back, like Mr. Abbott's prize frame hive, better for breeding purposes than the Cheahire prize hive, narrow from front to back, but wider from side to side, and thus containing more frames? Or, to take another shaped hive, the Steward's, which is very narrow when fitted with frames, but of great height when made up of three boxes, each 7 inches high. Which of these three shapes will produce the largest stock of brood under exactly the same circumstances? My own impression is, that a hive with greater space from back to front is most advantageous. This is Langstroth's view; and I am inclined to think in the case of a hive eked to the height of the Steward's, that after the brood has been hatched out in the uppermost box the workers would fill the old comb with honey to the loss of breeding space, and also of the supers. I should be glad to be enlightened on these points before constructing my hives for the coming season; and I think it is a subject of general interest.—O. B.

CRUDE AND PERFECT HONEY.

THE "RENFREWSHIRE BEE-KEEPER" is entirely wrong in asserting that "workers never eat eggs." They have been seen removing eggs from one cell to another, and the thing is by many intelligent and advanced apiarists considered an established fact. I have seen evidence of this fact a thousand times, and I am prepared to let visitors to my apiary in the summer season have absolute ocular demonstration of the same. A few more observations, or a little closer observation, will convince our Renfrewshire friend that he has yet something to learn.

It is the last of my wishes to dwell on the question of crude honey. What I have said aforesaid on it is in the opinion of the "RENFREWSHIRE BEE-KEEPER" "the crudest of crude theories, and will disappear like the baseless fabric of a vision." I have no theories on this question, for I am as convinced that perfect honey is made from crude honey by the bees as I am that wax is an excretion of bees. I am as well acquainted with the difference between crude and perfect honey as I am with difference between queens and drones, for I have been sealing, handling, and tasting both for more than fifty years. I have dissected hundreds of bees with crude and perfect honey in them. What my opponent calls "theory" I call knowledge, and what he calls darkness I call light, and both the knowledge and light existed before I was born. Many bee-keepers were then conversant with the fact that the nectar of flowers is twice swallowed by bees before it is made into honey proper. The American apiarists are beginning to find this out, and I am pretty certain that the intelligent bee-keepers of this country will not be long behind them.

Some three years ago a bottle of honey was placed on the tables of the Crystal Palace Bee Show, and beside it was placed a paper with this heading—"Mr. Pettigrew's theory of evaporation refuted." Though I had not any theory of evaporation, I then publicly offered to go fifty miles from Manchester and cut both crude and perfect honey from a hive and hand them to competent judges for examination. I also offered £5 to the prize fund of the Bee-keepers' Association if the gentleman who refuted me or any other person would convert the crude into perfect honey. "RENFREWSHIRE BEE-KEEPER" asserts that bees from the fields "carry the nectar of the flowers right up without any intermediate resting place to the super or uppermost portion of the combs, and hurry off for more till the cell is filled." This is not correct, for bees in returning from the fields first drop their pollen and honey in the cells in the centre of their hives, sometimes in queen cells, and afterwards convert it into honey, carry it aloft, and there store-it up.—A. PETERREW.

CHOICE OF RABBIT.—The females should be physically strong, the body long and well developed, the hind legs large and well apart, teats apparent, even when not pregnant, and filled with milk at the approach of birth. The doe should not be allowed to breed at less than six months old, although they may engender at five months; but it is better, if you wish to preserve a fine race of Rabbits, to wait until they are eight or nine months old before you allow them to bear. If under six months they would only produce weak and delicate young ones. Indeed Nature, with all her efforts, could not suffice for the development of the mother and give the nutrition necessary for the young at an earlier age.

OUR LETTER BOX.

DUCKS' EGGS UNFITTABLE (A. P.).—You have been unsuccessful two years. As you have bred from the birds with satisfactory results before we should be disposed to look to the management and feeding for the cause of failure.

Like most others you overfed. Instead of the varied bill of fare give them whole oats twice per day, morning and evening. Give them in a trough or vessel with a sod of grass at the bottom placing the oats on it, and the whole covered with water. Let them have some ground oats in water at midday; nothing else. Seeing that this is the third season of the drakes we think it would be wise to change them, or at least one of them. In putting Duck's eggs under hens you must recollect the Duck keeps them always wet morning and evening, the hen does not; they must therefore be wetted, or they will not hatch. This omission would not, however, account for the state of the eggs when broken; that would point more to the necessity for a change of drakes.

HERMIT FOWL (Reader).—We do not know the Hermit fowl, nor in our half-century of experience did we ever hear of it. The new breeds are so numerous we shall soon want a descriptive catalogue. An "all-year-round fowl" is as common as a never-sleeping servant. It is against nature for a layer to lay all the year round, and it is an impossibility. It does not follow because fowls do not sit that they are always laying. Formerly the Fencilled Hamburg was the most popular and the best known of the non-sitters, and was called the "ever-laying layer." They were then, as they are now, great egg-producers; but they had and have their time of moulting, when all their powers go to the production of new feathers. The only novelty that can be produced that will be of any real service will be a breed that will lay at all ages from November till March. That will hardly be found.

STRAW HIVES (T. J. Levet).—These dealers who advertise in our columns could obtain for you any that you require.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 43" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.	
	Baromet. at sea and 33 1/2 in. level.	Hygrometer.		Direction of Wind.	State of Sky at 1 P.M.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In air.		On grass.
March.	Inches.	deg.	deg.	S.W.	deg.	deg.	deg.	deg.	In.	
We. 14	29.992	49.6	46.8	S.W.	43.5	55.6	45.4	58.7	4.0	0.07
Th. 15	29.943	48.7	41.2	N.W.	41.2	52.4	58.1	50.1	84.5	0.017
Fr. 16	29.975	47.6	41.6	S.W.	41.6	52.6	57.6	58.4	85.4	0.027
Sat. 17	29.975	49.1	37.1	N.W.	40.2	46.5	31.1	55.0	26.8	0.027
Sun. 18	29.859	48.8	39.8	N.W.	39.0	43.2	30.6	55.2	27.1	0.010
Mo. 19	29.929	57.5	35.5	N.E.	53.0	46.6	29.8	51.1	25.8	0.010
Tu. 20	29.978	58.8	34.4	N.E.	53.2	49.2	31.3	52.9	26.0	0.020
Means.	29.855	41.8	39.0		40.0	49.9	35.0	55.9	51.5	0.144

REMARKS.

- 14th.—A very pleasant and at times a very bright day, and much warmer than its predecessor.
- 15th.—Very fine all day, but much colder.
- 16th.—Fine throughout, the sun at times very bright.
- 17th.—Very bright indeed at 9 A.M.; rather cloudy by 11, and the afternoon showery, with some snow.
- 18th.—Very bright all the forenoon; but slight snow shower about 2 P.M. and again at 4, and damp the rest of the day.
- 19th.—Fair at 10 A.M.; but rather much colder.
- 20th.—Fair but not bright in morning and forenoon; snow before 4 P.M., and wet evening.

Rapid fall in temperature towards the end of the week.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 21.

A BETTER BUSINESS has been doing, and prices have consequently improved, more particularly with late Grapes, as good samples are now coming very short. Strawberries are in good supply, and are quite equal to the demand. Forced vegetables meet with a ready sale.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	6 to 7 0	Nectarines.....	dozen	6 to 10 0
Apricots.....	dozen	0 0 0	Oranges.....	dozen	4 10 0
Cherries.....	dozen	0 0 0	Peaches.....	dozen	0 10 0
Currants.....	1 sieve	0 0 0	Pears, kitchen.....	dozen	0 0 0
Black.....	1 do.	0 0 0	Plums.....	dozen	1 10 0
Filets.....	dozen	0 0 0	Pine Apples.....	lb.	1 8 0
Pines.....	lb.	0 0 0	Plum.....	1 sieve	0 0 0
Cobs.....	lb.	1 0 0	Rumice.....	dozen	0 0 0
Gooseberries.....	dozen	0 0 0	Raspberries.....	lb.	0 0 0
Grapes, household.....	lb.	10 13 0	Strawberries.....	oz.	1 6 0
Lemons.....	100 6	10 0	Walnuts.....	bushel	5 0 0
Melons.....	each	0 0 0	do do.....	1/2 bushel	5 0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	8 0 0	Mushrooms.....	pottle	1 6 to 3 0
Asparagus.....	1/2 10	10 0 0	Mustard & Cross pinnet	0	2 4 0
Beans, Kidney.....	10	6 0 0	Onions.....	bushel	0 0 0
Beet, Red.....	dozen	6 8 0	Peas, picking.....	quart	0 4 0
Broccoli.....	dozen	0 9 1 6	Parley.....	doz. bushels	2 6 0
Brussels Sprouts.....	1 sieve	4 0 0	Parsnips.....	dozen	0 0 0
Cabbage.....	dozen	1 0 0	Peas, quart.....	0	10 0
Carrots.....	dozen	4 0 8	Potatoes.....	bushel	2 6 4 0
Capsicums.....	1/2 10	1 6 0	Kidney.....	do.	8 0 0
Calliflower.....	dozen	3 6 0	New.....	lb.	0 9 0
Celery.....	dozen	6 2 0	Radishes.....	doz. bushels	1 0 1 6
Coleworts, doz. bunches	2	0 0 0	Rubarb.....	bushel	0 1 6 0
Cucumbers.....	each	0 2 0	Salsify.....	bushel	1 0 0 0
Endives.....	dozen	0 2 0	Scorzoni.....	bushel	0 8 0 0
Fennel.....	bunch	0 3 0	Seakale.....	basket	3 0 8 0
Garlic.....	lb.	0 8 0	Shallots.....	lb.	0 0 0 0
Herb.....	dozen	8 2 0	Spruce.....	quart	2 4 0 0
Horseradish.....	bushel	0 0 0	Tomatoes.....	1 sieve	0 0 0 0
Lettuce.....	dozen	1 2 0	Turpins.....	bunch	0 0 0 0
Leeks.....	bunch	0 4 0	Vegetable Marrows.....	0	0 0 0

WEEKLY CALENDAR.

Day of Month Week.		MARCH 29—APRIL 4, 1877.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day	Month		Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. a.	
29	TH	London Institution at 7 P.M.	53.8	53.7	43.3	5 44	6 26	7 18	5 30	●	4 47	88
30	F	GOOD FRIDAY.	53.8	54.6	44.2	5 41	6 28	8 45	5 43	15	4 29	89
31	S		54.9	54.5	44.6	5 39	6 29	10 10	5 59	16	4 10	90
1	SUN	EASTER SUNDAY.	54.8	54.1	44.5	5 37	6 31	11 39	6 15	17	3 53	91
2	M	EASTER MONDAY. Bank Holiday.	55.3	56.0	45.6	5 34	6 33	morning.	6 46	18	3 34	92
3	TU	EASTER TUESDAY.	56.8	55.7	46.2	5 32	6 34	0 47	7 23	19	3 16	93
4	W	Royal Horticultural Society—Fruit and Floral Committee at 11 A.M.	56.5	56.9	46.2	5 30	6 36	1 49	8 13	20	2 58	94

From observations taken near London during forty-three years, the average day temperature of the week is 55.1°; and its night temperature 54.9°.

NOTES ON APPLE CULTURE.



QUESTIONS were propounded on page 129, vol. xxx., by "AMATEUR ORCHARDIST" which have not met with that response which the subject deserves. I hoped that observant fruit-growers would have come forward and given the results of their culture of hardy fruits in various parts of the country and in all classes of soils.

I have noticed in the instructions given by many who have written on the subject that there has been too hard a line fixed. Some say, Grow all your Apples on the Paradise stock; plant 6 feet apart; summer-prune, and then gather your crops. I commenced according to instructions, purchasing the best sorts at the large nurseries, and after some years of experience I found that there were many parts of my orchard in which matters were going wrong, though I had abundant success with the greater number of my trees. My want of success was partly due to having given the same treatment to many of the varieties, regardless of their requirements; but there were other causes of non-success which I propose to detail, so that others may be cautioned by my experience, confining my remarks to Apples.

I may here state that I live in a southern county, and that the soil of my garden is a deep sandy loam. Great annoyance and vexation are often caused by nurserymen sending out their trees not true to name. I have a large proportion of my orchard occupied with sorts I do not require, and never ordered. How this evil is to be avoided by purchasers I do not know, as it is often years before the mistake is discovered. I have twice tried to procure Small's Admirable, and both times have had sorts sent to me which were not true to name. How does the error creep in? Who is in fault? In some cases I suspect that the men trust to their knowledge of the appearances of the trees and so dig them up without referring to the labels. Perhaps an error once made in labelling may be perpetuated by grafting from young trees without fruiting the sort; but from whatever cause this evil may arise it is very important that nurserymen should direct their attention to the subject. Perhaps I have been more unfortunate than others, but as an instance I will mention that in a collection of eighteen varieties purchased at a large nursery five were sent to me with names that did not belong to them.

There is a habit which some nurserymen have that I wish they would discontinue—namely, sending sorts which they have a stock of should they happen to be out of those ordered; to say the least, this is assuming that the customer looks more to filling-up his orchard plot than arranging his varieties according to his taste. It is very disappointing when, for instance, the customer orders a variety he particularly wishes to try and another is substituted by the nurseryman with the remark that it is better than that ordered and comes in at the same season. This occurred to me a few years ago; perhaps the variety was "better," but I did not want it.

Appropos of this subject I recollect turning out some plants of a certain sort of Rose from my borders because I had too many of them, and, having made room for others, I carefully selected from Mr. Hinton's valuable list what I required. On the arrival of the hamper from the nursery I was much disappointed to find the old discarded Rose that I had sent to keep company with the Cabbages included in the parcel, the grower having sent me the number ordered, but very few of the sorts required. I am quite aware that buyers are wrong in delaying their orders till it is difficult to obtain the trees they want, but I do not see how the matter can be set right by sending sorts which were not ordered.

I must protest against the manner in which pyramids and bushes are often tied up at some nurseries. As far as my experience goes four-out of five trees have arrived with the chief lower branches or principal roots broken by the tying material. I have tried to remedy this by ordering only maiden trees, but broken bushes were sometimes sent instead.

In regard to the stocks for Apples my experience justifies my saying that the Broad-leaved and Nonsuch Paradise stocks are very valuable to amateur orchardists. They give an abundance of surface roots, they are readily root-pruned, and they cause the varieties grafted on them to produce short and stout branches. They have many other good qualities, not the least of which is that an orchard consisting of pyramids on these stocks is more likely to give an even growth throughout than one on stocks grown from seeds—the plan adopted by some growers.

Part of my trees (pyramids and bushes) are on stocks as last described. Some of the specimens do well enough and root near the surface; others are small and weak, and produce small fruit; others, again, produce strong roots which make rapid progress towards the centre of gravity, and are very difficult to prune both in root and branch so as to keep them on an average with the others; in fact among these I find so great a variety of growth that they give a considerable amount of trouble.

This brings me to the subject of the Crab stock. Notwithstanding that my trees are growing in good loam I find it very advantageous not only to grow some varieties on strong Crab stocks, but to abundantly manure the ground and in every way encourage strong growth. Some Hawthorndens on Crabs were for some years here particularly liable to canker and to produce crops of small spotted fruit, but by dint of abundant supplies of manure, pruning away all weak growth, and thinning the crops, I have succeeded in converting sickly bushes into strong and handsome specimens capable of producing heavy crops of very fine fruit, and the trees are now quite free from canker and making good annual growth. I believe the roots are well down into the loam by this time, and that the weak growth and canker were the results of removals and root-pruning, and consequent loss of vigour.

I have the French Codlin on the Crab stock; this I manure abundantly, and the fruit grows two and three in

a bunch on the long upright branches like ropes of Onions. The tree forms a very beautiful dwarf upright bush. Another variety which I think requires the Crab stock is the Baldwin. This is a very heavy cropper. In 1875 I had six bushes six years old from the graft which produced six bushels of fruit; they are planted among others at 6 feet apart each way. The highest fruit gathered was 5 feet from the ground. Two of the trees were very small. At this rate an acre would produce 1210 bushels—pretty fair for one year's crop. The fruit was very large, one-third of the crop having been thinned away in the summer.

I have not had much experience with Lord Suffield, but it looks as though a strong Crab stock would suit it. I have six pyramids of this variety on seedling Paradise stocks; they produce abundant crops of very handsome fruit, but they seem to want vigour. Much has been said in praise of Lord Suffield; it is a very fine variety and produces large crops, and is a sure cropper at an early age, but I do not think that the flavour is to be compared with many other Apples of the same season.

I do not consider it advisable to root-prune the Crab stock. I have a long row of pyramids of Dumelow's Seedling all on Crab stocks. Some years ago I had them root-pruned to check over-luxuriant growth; in three or four seasons they recovered from this treatment sufficiently to bear a crop of fruit, but the next year they were as luxuriant as ever. They are now about twelve years old, and are beginning to look like giving small annual crops. I suppose I must keep them summer-pruned and wait their time.

Gardeners very often depend upon the knife only in forming their pyramids and bushes. I have formed some very good pyramids by carefully tying-out the branches, arranging them at regular distances from each other; thus utilising many crowded branches which I have often seen gardeners cut out.

Many varieties, such as Hawthornden, Lord Suffield, &c., produce fruit buds at the ends of almost every shoot. In forming the trees it is necessary to cut-off these buds from the leading shoots so as to insure regular growth.

In planting an orchard note should be taken of the great difference that is found in the mode of growth among the varieties of Apple trees. Although many are very suitable for pyramids, others spread and droop remarkably; others, again, are almost as upright as Poplars. The advantages of arranging an orchard in accordance with the mode of growth will become very evident after the trees have been grown a few years. In planting a plot of ground as an orchard it is desirable that trees of any peculiar mode of growth should be kept by themselves. The greater number of the varieties might be grown as pyramids on the Nonsuch Paradise stocks 6 or 7 feet apart. I find it inconvenient to grow bushes among pyramids. Some varieties have a spreading habit, these are better kept in a separate part of the orchard and planted somewhat wider apart than the general run of bushes.

I find Northern Greening, if I have it true to name, a very upright grower, and should be planted in a row by itself 4 or 5 feet apart if on the Nonsuch Paradise stock. Melon Apple does not readily make fruiting wood, and should be very carefully summer-pruned to keep its strong arms within bounds; it has a very spreading habit. Hawthorndens should be on strong Crab stocks in a row by themselves, say 8 feet apart, and allowed to send out strong shoots and strong roots. Let them be maiden trees when planted. Encourage vigorous growth. Do not summer-prune, but tie-out the branches into their proper places to let in sun and air; prune when required in the winter. They will give abundant crops at an early age; in fact one of the difficulties with this variety is the formation of too many fruit buds before the grower has had an opportunity of forming a bush to his taste. By growing the Hawthornden as above, and in a deep rich soil, the orchardist will have his eyes gladdened and his palate gratified by an abundance of large and beautiful fruit on trees free from canker. Should the soil not be suitable do not waste time by planting it.

Hitherto I have only grown forty varieties of Apples, I am therefore looking forward to the pleasure of perusing the results of the forthcoming election. In the meantime I should like to make a few remarks on some kinds that have given me the greatest satisfaction.

In kitchen Apples French Codlin commences the season here with its large crop of fruit of excellent flavour. Lord Suffield makes a very fine pyramid; it has handsome foliage and abundance of fine fruit, and is very beautiful when in full blossom.

Hawthornden should be grown by all who can manage it;

the crop is abundant, the fruit large and of excellent flavour. Children who know my garden always make their way direct to the Hawthorndens when the fruit is ripe, and as long as they are to be had will leave the other sorts.

Baldwin, with its large crop, I would not be without; it has an excellent flavour, especially when baked whole. Dumelow's Seedling and Rymer I depend upon to supply the kitchen during the winter months—in fact till the middle of April. Both are excellent, giving abundant crops; they should be grown more largely than the other kitchen sorts.

Northern Greening I keep till spring, when it is an excellent dessert Apple. My trees on the Nonsuch Paradise stocks bear abundantly and regularly. I had a large crop of this last season, and it is my chief dessert Apple during this scarcity of other sorts.

Blenheim Pippin makes a satisfactory amount of growth; but I suppose he who plants this excellent variety grafted on a free-growing Crab stock should have patience as regards fruit. I have a bush as above which by some mistake was planted among those on the dwarfing stocks. I had a large circle cleared round it, and live in hope. I have also a standard of this fourteen years old from which I have gathered a large specimen; I am thus encouraged. I have also some bushes on the Nonsuch Paradise stock, but they are too young to produce a crop yet.

Cox's Pomona I always save until it becomes a dessert Apple, it is then delicious. I am now tasting a specimen; it is very tender, juicy, and refreshing. I strongly recommend it. It is excellent as a culinary Apple in the autumn if it can be spared for that purpose. It is an abundant cropper and very handsome. I do not root-prune this, but manure the surface of the ground over the roots.

Cox's Orange Pippin is the finest-flavoured Apple that I have tasted, it makes a good pyramid and is a great bearer.

Reinette de Canada is one of the best of dessert Apples, very delicious, and lasts till spring. My bushes of this variety bore large crops last season notwithstanding the general scarcity. It is one of the most useful dessert Apples we have.

Scarlet Nonpareil is a beautiful Apple for the dessert table, medium-sized, and very rich in flavour. It is an abundant bearer and a very satisfactory variety in all respects.

Winter Pearmain is a large, handsome, and fine-flavoured dessert Apple; beyond this I am unable to testify as to its merits, as my dozen trees on a variety of stocks do not afford a sufficient supply to enable me to send any to the kitchen. My trees bloom abundantly, but the blossom in all cases seems weak and does not set well; moreover, the birds are too fond of the fruit before it is ripe. Nearly all my crop of a dozen or two is obtained from a strong-growing standard. What can be the cause of my want of success as regards cropping this variety?

I have also an unnamed Apple coming-in about the middle of July, very juicy and refreshing, the flavour excellent. In some respects it resembles Margaret, but in colour and form it differs widely from that variety.

I have already extended my notes far beyond my original intentions, but I have yet another word to say. Could not something be done to encourage planting fruit trees? I know the Editors of our Journal are doing a great deal in this respect, but when we find so much land lying almost waste, and consider the great and increasing demand for fruit in this country, and the profits that accrue from fruit-growing, it is enough to make one ask the question, What can be done? The root of the matter seems to be the fact that an immediate profit cannot be made by planting.

Then in regard to the gardens attached to moderate-sized houses, the excuse for not planting is generally, "I am only a tenant for a short period, and I do not suppose I should ever gather the fruit if I were to plant the trees." But surely this is a very selfish and short-sighted policy. A few Apple trees cost but little, and it very often happens that the tenant stays until he regrets not having planted. Besides if all did a little, small gardens would very soon be profitably stocked, and no one could reasonably regret having planted, even if others should gather the fruit.—W. G.

GLADIOLUS CULTURE.

I HAVE grown Gladioluses ever since I have heard the name, and as the way that I treat them is so simple and safe to the cultivator, I hope that it may encourage others to do the same. I shall begin with the autumn when the bulbs are considered

to be ripe. I cut all the tops off above ground; I have the bulbs forked up during a fine day and left in the sun till they are perfectly dry, when they are taken to the store for the winter season. They are all placed singly on a layer of sand on the floor where the other roots are kept, and by the first week in April they are all well rooted in the sand and ready to be planted out in the border or any other part of the garden. I have examined the bulbs every month in the year, and I find that the *Gladiolus* vegetates the same as the other bulbs, the *Snowdrop*, the *Crocus*, the *Hyacinth*, and the *Tulip*—if kept too long on a dry shelf they all moulder into dust, but by proper treatment their offspring will live very long.—
WILLIAM GAIN, *Gardener, Lynewood, Hants.*

RAISING CELERY PLANTS.

SOME time ago Mr. Harding contributed useful notes on the culture of this important vegetable, and stated that his best heads were those produced by plants which had been transferred direct from the seed bed to the trenches without the intermediates transplanting that is generally recommended. My experience is the same as that of your correspondent, but my mode of raising the plants differs from his, and I think it is better. I have raised Celery plants in various ways and at different seasons, but the way that I have found the best is also the simplest and the easiest. It is not all who can adopt the same plan, but if those who are able to do so will try it I am sanguine that they would continue the system in future years.

About the first week in April the heating material (leaves and manure) is ready for removal from the *Seakale* and *Rhubarb*. The manure is then "worn" and apparently exhausted, yet when thrown into a heap and watered, if necessary, it generally recommences heating, and it is certain to do so if a few barrowfuls of lawn mowings are mixed with it. Now it is a pity that the heat in this manure heap should be wasted when so many plants of various kinds would benefit by it if permitted to do so. The heap is therefore levelled down and a few inches of rich soil spread over it, supported by four boards nailed together, the same as described by Mr. Luckhurst for raising *Dahlias*. The soil is well watered, and the Celery seed is sown thinly during the first week in April, and is slightly covered with fine soil. Straw covers are then placed over the bed, which prevent the surface from becoming dry, water seldom being required until the plants appear. A very small amount of seed is sufficient to sow a bed 6 feet long by 4 feet wide; about the same quantity, in fact, as is usually sown in a seed pan 8 or 9 inches in diameter. When the seedlings appear I prefer them to be not nearer than a quarter of an inch apart, and as soon as they are large enough to be handled two-thirds of them are thinned out; each plant remaining has then space for development. All the light and air possible is admitted to the plants consistent with safety, and water is supplied to them copiously.

In June the plants are large enough for transplanting, and are then transferred to the trenches to perfect their growth. They are not tall, wiry, and tender when removed, but are dwarf and sturdy, so much so that one plant would weigh as much as five of the same height which had been raised thickly in pans under glass. The plants from the manure heap are also, by the exposure to which they are subjected during growth, far better able to resist the effects of bright sunshine than are plants raised in a more tender manner. They are also better than plants which have been twice transplanted, for at every removal a check is necessarily received, and every check is promotive of "bolting," which is occasionally so ruinous to this crop. I have found no plan equal to the above for raising Celery plants, and it is one that can be adopted in all gardens where a few leaves, a little stable manure, and a barrowful of lawn mowings are procurable. The compost comes in afterwards for manurial purposes, the same as it would had it not been utilised in the raising of Celery plants. In fact, the manure is better rather than worse for the covering of soil that has been afforded, and the frequent applications of water which have been given.

Such a rough gentle "hotbed" with or without a covering of glass is also very valuable for the raising of many plants for the flower garden. By no other mode known to me can such satisfactory plants of *Stocks*, *Asters*, *Marigolds*, *Phlox Drummondii*, *Petunias*, *Helichrysums*, *Zinnias*, &c., be raised, and as Mr. Luckhurst described on page 189, no plan can surpass it for raising *Dahlias*. If the manure is not likely to be

wanted during the summer the bed answers capably for growing hardy ridge *Cucumbers*, stout plants of which should be ready for "putting out" when the Celery or flowering plants are removed to their permanent quarters. I commend this simple mode of raising Celery plants, &c., to the notice of all who are able to give it a trial.—A NORTHERN GARDENER.

EXHIBITION PANSIES.—No. 4.

IN growing Pansies for exhibition no great amount of scientific knowledge is required, the treatment being of the simplest kind; still a few notes upon the subject may not unfitly bring to an end my observations upon my favourite flower, and may possibly be of slight service to some of your readers. It must be remembered, however, that I speak purely from an amateur's point of view, but at the same time from actual experience.

Rich sandy turf and very old stable manure in the proportion of two-thirds and one-third will serve admirably for the constituents of the beds, and they should be thoroughly incorporated and frequently turned over two or three weeks before the work of planting is begun, in order that the soil may be well sweetened. The plants should be pnt in deep, and in the case of any which are weakly the addition of a little silver sand is advisable as an incentive to speedy rooting.

Snails have now to be guarded against, and a pest they are indeed, showing as they do a very decided partiality for Pansies. There are so many "certain ones" for snails that to enumerate them would occupy largely your space, and in the end only prove confusing. "Catch 'em and kill 'em" is the best advice, but how to do it is the question. Few expedients beat the cabbage-leaf trap, for with all their fondness for Pansies they prefer Cabbage. Of course the setting and subsequent examination of the traps entail much labour and severe pains in the back, but the capture and destruction of the "varmint" is ample reward. I have tried paraffin and other so-called prophylactics with varying results; but the oil is certainly less a failure than many of the experiments advised. A sprinkling of Peruvian guano, too, is effectual but dangerous, and its virtue almost disappears after a shower of rain. That snails do not like it is clear from the fact that if you put a pinch upon one death is certain. "The early bird picks the worm," and if a successful raid is to be made upon snails early rising is necessary, though late at night is also a good time.

In dry weather the beds must be plentifully watered, though a thorough soaking is desirable rather than constant sprinkling. A top-dressing of cow dung will keep the plants comparatively cool at the roots; but where this would prove unsightly an inch deep of cocca-nut fibre refuse will answer almost as well. Like the former, the latter when decomposed is an excellent fertiliser; indeed, it is an invaluable article in the garden. This top-dressing will often prove beneficial when the blooms come small, deformed, or rough, and on warm nights a saturation of the walks about the beds will materially aid in producing good blooms, the humidity of the atmosphere being very grateful after a day's hot sun. As in all other flowers some varieties are bad growers; but if any resolutely refuse to advance the best plan is to transplant them. They may have found something they do not like, and the remove may be all they require. Once or twice during the season, according to the progress they are making, very weak liquid manure should be given, care being taken, of course, to keep it off the foliage, and for this purpose cow dung is preferable, its action being mild and cooling.

Opinions differ as to the advisability of disbudding when blooms are not required; but my own experience conclusively proves that the practice is a right one. It certainly encourages the growth of the plant and increases the size of subsequent blooms. When the plants have fairly begun growing—when shoots appear from the root—take the flowers away as soon as convenient, for such a course will not only increase the stock, but benefit the parent plant by causing it to produce better flowers. Some, however, throw out many shoots from a single stalk, and instead of taking them off as rootless cuttings I have found soiling them up the best plan, for in a fortnight or three weeks each of the stems will have made root, and are then easily and safely removable.

With choice varieties constant propagation should be pursued, especially as Pansies are, like all else possessing life, liable to disease. The type most to be feared is that which attacks the root, causing the plant to become limp and weak,

changing the verdant leaves to a sickly yellow, and eventually kills it. Only one resource is open, and it is a vigorous one. Take up the plant as soon as it begins to lie down, cut limb from limb, and plant as cuttings. Thus the variety may be retained, though for the current year it may not bloom. Leggy plants are best increased by layering, and this should be done deep enough to prevent the rain washing off the top soil. Green twigs about 5 inches long twisted into the form of a staple may be used to secure them, though I have found galvanised wire very useful.

Regarding exhibiting my remarks must be brief. One of the chief matters to be considered is shading the blooms, and in this great care should be exercised. I endeavour as much as possible to shade the bloom without shading the plant, and for this purpose the smaller the shade the better, for while the bloom is being preserved from the sun's hot rays the plant should not be deprived of the light so necessary to its existence. I have found, too, that it is just as well to cut the blooms overnight as to do so on the morning of the show. Placed in water in a cool airy cellar they look as fresh and beautiful as when on the plant, and the risk of heavy rain and the slimy perambulations of the snail are avoided. Manipulation of blooms is to be reprobated, and a keen judge will soon discover which has been handled and which has not; and however much smoothness may be desired it should not be gained by the means indicated. Too many sels in a pan should be avoided; two in a twelve or four in a twenty-four will be found to be ample, and above all let the names of the blooms be given. The public who pay to see them have a right to know their names, in order that they may take a list of any they fancy without the trouble of asking the exhibitor in whose particular pan the fancied flowers may be shown.

In concluding my remarks upon Pansies let me trust that they may have awakened in a few at least an interest which may blossom into a wider recognition of their merits, and cause prizes to be offered in schedules which now know them not, and if such is the result I shall be amply repaid for any trouble I may have taken in calling your readers' attention to them. To "A NORTHERN GARDENER" my thanks are due for his kindly remarks and friendly encouragement, and I hope his suggestions of adventitious prizes being offered at special shows will be adopted and spread to the great shows generally. Who knows but we may not, like our friends "Over the border," have some day a National Pansy Society? Respecting "C.R.'s" animadversions upon my Pansies and the Judges who awarded them the prize at the Nottingham Show last year, I must, in all humility, submit that the verdict of three disinterested florists is preferable to the *ipse dixit* of an anonymous correspondent.—M. H. MILLES, *Leek*.

P.S.—In July I hope to send you a few notes on the 1877 varieties which come under my ken.—M. H. M.

LARCH TREES AND THEIR CULTIVATION.

The seeds of the Larch made use of in the plantations of Scotland came from the Alps. The Russian variety appears not to have hitherto succeeded, proving, perhaps, the inferior quality of the seed imported from that country some forty years ago, to the estate of the late P. Pusey, Esq. I was employed largely in planting Larch and other forest trees, but I will confine myself to the Larch. There are two modes of planting the Larch—in trenches and in cuts. In the first method trenches proportioned to the height of the trees should be dug in the autumn, and the soil exposed to the winter's frost. In order to plant after the latter mode a rectangular cut is made with two strokes of the spade; with the second cut enough of the soil is raised to make room for the roots, which when covered must be trodden down with the feet. This is an economical mode of planting—prompt and effective. It is usual to allow from one to two thousand trees per acre, but I have found by experience that twelve or fourteen hundred are sufficient. The Larch raising with its branches in the form of a cone it is necessary during the first ten years of its growth to allow ample space for the extension of its inferior branches, which, in fact, should serve as a counterpoise to the summit, and promote a regular straightness of the trunk, which is a most important quality in all timber of the Pine class; in fact, a crooked Pine is scarcely vendible, it will neither make planks, beams, nor rafters. It is for such reasons that I recommend the above mode of management for the Larch.

The plantations must be regularly thinned in order to aid their proper and effectual growth. The thinnings during some

years may not return the expense of making them, but are absolutely necessary to give room for the spread and more rapid growth of the remaining trees. At the age of fifteen years the convenient custom may be introduced of making use of the Larches for the purpose of Hop poles; at twenty-five years the trunks may be converted into strong palisades and rafters for the roofs of cottages; and at the age of forty years they become fit for boards, joists, and even for beams in the construction of the largest edifices. Such is the growth of this Pine in the climate of Scotland.

It has been remarked that the Larch planted on poor soils improve them in a remarkable manner, and that lands which had produced nothing but stunted Heath and rubbish in a few years had changed their face and become covered with green herbage, from the leaves of the Larch falling on the approach of winter and enriching the soil. In mountainous districts the shelter afforded by these plantations to the flocks and herds there fed may become an object of the greatest importance. In ornamental gardens of a certain extent few forest trees are more beautiful than the Larch; its long and pendant interior branches extending over the green turf produce a most graceful effect.—W. GILES.

BEAUTY OF GLAZENWOOD ROSE.

SOME mystery appears to be attached to this Rose that requires clearing up. The decision of the Floral Committee of the Royal Horticultural Society is very unwelcome to many who have purchased the Rose on the faith of its being flaked and striped "like a Tulip;" and now the upshot is that the colour is "plain coppery yellow" and identical with Fortune's Rose. Mr. George Paul is such an experienced rosarian and so careful in regard to names that he is very unlikely to have made any mistake in exhibiting his plants.

Beauty of Glazenwood has, it appears, been largely sold, seemingly in consequence of the glowing descriptions which have been published and the "coloured illustrations" which have been distributed. Coloured illustrations are useful aids in conveying an idea of the appearance of a flower when the figures are truthful; but when over-coloured and unfaithful to nature they become dangerous, and cause money to be lost and tempers to be ruffled. I know of more than one case where "coloured illustrations" have resulted in loss and disappointment; and have been informed (but I am reluctant to believe in the truth of the assertion) that some of the coloured plates of the day are paid for by the owners of the subjects.

It appears that the first coloured plate of Beauty of Glazenwood Rose was published in the "Floral Magazine," and was afterwards reproduced in the "Flore des Serres." I have not seen the plate in the English periodical, but I have in the Belgian publication; and it is significant that the then Editor, the late accomplished Louis Van Houtte, was careful to place the responsibility in regard to the illustration on the English owners of the Rose and the paper in which it was first portrayed.

The Rose as figured in the "Flore" is marvellously, almost fabulously beautiful. The flower exceeds 4½ inches in diameter, the petals being shown of great substance and boldly recurved, the flower being also very full in the centre; the colouring is brilliant, the irregular flakes of vermilion on the orange ground being firm and decided—in fact they are as distinct as the flakes on a Carnation or a Tulip. The foliage is broad, robust, very dark green, clearly veined and deeply serrated; consequently it is not surprising that such a magnificent Rose should have been largely bought and now offered in lists of "new Roses."

Now Beauty of Glazenwood as figured has not the slightest resemblance to Fortune's Rose. Fortune's Yellow is not orange flaked with vermilion; it does not produce flowers 4 to 5 inches in diameter with recurved petals; it has not broad, dark green, much-serrated foliage; and yet the plant exhibited as the real Beauty of Glazenwood is declared by the highest authority to be identical with Fortune's Rose.

I will now turn to a description of Beauty of Glazenwood which appears in vol. xxix., page 353, of the *Journal of Horticulture*. It is from the pen of Henry Curtis, Devon Nursery, Torquay, and is as follows:—

"A few years ago we looked upon the list of forthcoming new Roses with much greater interest than at the present day, for so many new varieties are annually poured into the market, which prove mere costly rubbish, that we have had a cooling-down. Had Mr. Smith's illustration of Beauty of Glazenwood,

in the "Floral Magazine," appeared in those old times, it would have created a tremendous sensation, and, cautious as we are grown, this real novelty cannot fail to awaken much interest throughout the Rose world. A Rose of golden-yellow, striped and flaked with scarlet or vermillion, sounds like a dream or a fairy tale. It is, nevertheless, a reality, attested by Mr. Smith's brilliant plate, in which Mr. Woodthorpe considers full justice is not done to the richness of colouring of the Rose itself.

"When I was in Essex, in July, I had the pleasure of seeing fine healthy trees of this remarkable Rose, but I was a little too late for the flowers. Some blooms had just been sent to Mr. Smith for making his illustration, which may have been seen already by some of your readers. I am glad to testify to the very vigorous growth and hardy character of this Rose. The heads of standards of it consist of long graceful shoots from 4 to 6 feet in length, which were last winter perfectly uninjured even to the tips, though quite unprotected.

"Beauty of Glazenwood is a summer-blooming variety, and will make a beautiful climber or an equally fine standard, flowering as it does from every eye on its long pendulous shoots. Mr. Woodthorpe describes it as strikingly lovely in the bud state. It is like Madame Falcot in its yellow ground, while the vermillion flakes on the petals resemble 'the colouration of a Tulip,' and it has also a delicate fragrance.

"It will certainly prove an important and charming addition to our already rich array of Roses, and be most valuable in hybridisation, on account of its peculiar colouring and distinctness."

I refrain from further comment, but ask all who are able to do so to render such information as they may be able to submit. The Rose must have been seen before it was figured. I ask, By whom was it seen, and if other Roses equal to the specimen have been since produced? If the Rose was a mere sport—a freak of nature—fickle, inconstant, and not reproducible, the sooner the accident is known the better for all concerned. Perplexity is now rife, and information is much needed.—ROSBARIAN.

RUST ON GRAPES.

Your correspondent Mr. Dickson, who has gained for himself enviable celebrity as a Grape-grower, has expounded a theory about rust on Grapes which will clash with the teachings of many of your correspondents. He says that he attributes it to thrips, which commence at a very early stage of the growth of the Grapes. Now anyone who has had experience of the effects of thrips and rust will see at once that they are quite different. What I understand by rust is a coating (a parasite) partly or all over the berry. On the other hand Grapes which have been attacked by thrips present a different appearance, which is that of having been deprived of their bloom and colour, and the skin assumes a whitish hue. The skin is also very thin after being sucked by the thrips, which is not the case with those berries affected with the rust parasite.

I agree with Mr. Dickson where he says he does not believe that rust is brought on by careless manipulation at thinning time. Most of us have heard it exclaimed, "Don't let your hair touch the Grapes," and again, "Don't handle the Grapes." I will not offer advice, but merely state facts.

There is another thing I would mention which bears upon this matter—that is, advice is frequently given to your readers concerning keeping vinerias free from superfluous moisture and giving extra heat while the Grapes are in flower. I witnessed an instance not long ago of this advice being ignored. The Vines were kept back until they were in flower, and even then were not forced. They had plenty of heat through the day, but no artificial heat at night. The house was full of bedding plants, which caused much water to be spilled about the house. The result was as soon as the ventilators were closed in the evening the house filled with vapour, which was towards morning condensed into water by the coldness of the atmosphere, and the bunches of Grapes in flower were often covered with minute particles of water. In course of time I observed much rust and deformity amongst the berries, therefore I am thoroughly convinced that it was the damp which caused it all. To prove this, take the case of hardy fruits. Look at the effect hail and frost have upon Pears when in flower in the fruit coming ill-shaped and much rusted. Raspberries and Strawberries will be seen often with about four or five seeds on one side swelled while all the others are blasted, yet on the same plant some superb fruit may be found, accord-

ing as the blossoms and setting fruit have been sheltered from the frost, &c. I agree with Mr. Dickson that most deformities, such as rust, &c., are contracted while the fruit are in the embryo state.—B. G., Co. Down.

I AM glad that Mr. Dickson has opened up the subject of rust on Grapes, but I must differ from him in attributing the principal cause to the attacks of thrips. The injury to the berry from that troublesome pest is very different in appearance from the rust proper. In the former case the berries have minute streaks of discoloration affecting their under sides, also the interior of the bunch. Rust proper generally affects the outer or upper surface of the berry, and has the appearance of evenly-distributed russet brown.

I have no doubt but at times the fumes of sulphur act injuriously on the berry in its early stages of growth; cold draughts also are a source of rust; but my experience tells me that the most fertile cause of rust is rapid evaporation of moisture from the surface of the berry.

Some years ago having a great press of work I omitted giving air early one morning (I always anticipate that part of the business), but instead of giving air by six o'clock, on the occasion referred to it was neglected till eight; the house was then full of moisture which condensed on the berries. The top lights were opened, and an abundance of air given, and the result was at every opening the berries were much rusted, caused I have no doubt by the rapid evaporation of the condensed moisture killing the outer skin. I have occasionally seen similar results, but not to such an extent. Cold draughts of air are more injurious in my opinion to the foliage than to the berries, checking the respiration of the plant and causing warty excrescences on the under surface of the leaves.

I have purposely passed bunches through my hands to see if that would rust them, but no other injury resulted than the loss of bloom.

I would say to all whose Grapes are liable to rust, Give air early—in small quantities at first, gradually increasing it as the temperature rises. In the event of neglecting to give air early, and the berries are covered with condensed moisture, give air very cautiously so as to prevent rapid evaporation. If this practice is followed I am convinced we should hear and see less of rusty Grapes, and much good will result in the well-doing of the Vines.—J. GADD, Thorndon Hall, Brentwood.

HYACINTHS IN LONDON.

OWING to the few hours which elapse between the periodical Wednesday exhibitions and our going to press a mere cursory glance can only be given to the collections when they are then submitted to the public; yet the contributions of Hyacinths as annually exhibited are so extensive and superior that a more leisurely inspection of them becomes necessary in order that we may enable those who cannot see the plants for themselves to form a correct estimate of the best varieties. With the object of placing before our readers the most constant and meritorious Hyacinths now in cultivation the collections of the chief exhibitors have been visited, beginning with those of

MESSRS. VEITCH & SONS.

These Hyacinths demand notice from their "all round" superiority. As now arranged in the nursery at Chelsea their effect is highly imposing. Messrs. Veitch during some former years may have produced a few spikes more stately, but taking the collection in its entirety we do not hesitate to say that for vigour and quality a finer example of Hyacinth cultivation has never been seen. The following varieties are pre-eminent. Whites—It is not easy to determine which is the very best white Hyacinth, but probably the majority of visitors would award the palm to *Ls. Grandesse*; every spike of this is truly grand. Snowball is pure and more massive than we have hitherto seen it, but it does not produce a tall spike. Mont Blanc is spotless and stately, and *L'Innocence* is as pure as its name implies and altogether good. The two older varieties, *Alba Superbissima* and *Baroness Van Tayll*, are in excellent form. *Madame Van der Hoop* and *Lord Shaftesbury* are noticeable from their enormous bells, and *La Tour d'Anvergne* is still the best double variety, the immense new variety, *Globose* not being quite pure. Blues—Amongst the darks, which are not numerous, *King of the Blues* certainly heads the list. General Havelock is also excellent, and the old *Baron Van Tayll* sustains its reputation as being still one of the best. Amongst varieties a few shades lighter *Marquis of Lorne* (new), a bright vivid blue, is a great acquisition. *Marie* and *Nimrod* are also very good. Light blues are numerous and superior. The finest spike of all is *Princess Mary* of Cambridge. Lord Byron, *Diondin*, *Czar Peter*, and *Grand Bleu* are the best in this section. *Lord Beaconsfield*, lavender, is very delicate;

and another new variety, Tricolor, blue with dark veins and shaded segments, is commanding from the great size of the bells. The best mauves are Sir Henry Havelock and Haydn; and the best blacks, Masterpiece and Prince Albert. The most noticeable of the reds and pinks are Orange Queen (new), a decided improvement on Vurbaak; Garibaldi, Polaster, Prince Albert Victor, always good; Von Schiller, Prince of Orange, Meteor (new), rich; Ema, semi-double, fine; Fabiola, Macanlay, and Princess Clothilde. The finest yellows are L'Or d'Australie, Obelisque, and Ida. Associated with the Hyacinths are Tulips, Clematis, &c. Many choice Orchids are now flowering, and the "Easter show at Veitch's" is highly worthy of inspection.

MESSEURS. CUTBUSH & SON, HIGHTATE.

Dutch bulbs have long been *peculiarities* in this nursery, and in few places have better Hyacinths, &c., been grown. The show house at Hightate, to which visitors are invited, is now exceedingly gay, and considerable taste has been exercised in arranging the plants. The house is span-roofed, with a bed in the centre and stages round the sides. The centre bed is occupied with Tree Ferns and Palms, with a marginal line of Hyacinths, two raised rows of Hyacinth being arranged on the side stages, and fringed with small Heaths, *Erica germeriana* being very effective; Lilies, *Cyclamens*, *Azalea amœna*, and very small Camellias. The background of glass is covered with baize, which shows the Hyacinths to great advantage. At one end of the house are variegated Yuccas, and at the opposite end a bank of Tulips. The Hyacinths this year have been grown entirely by Mr. Cutbush, jun., the youthful partner of the firm, who, for the first time, has "tried his hand" at their cultivation, and with very creditable results. The same varieties are represented as noted above, also capital spikes of the following:—Van Hooboken, waxy white, fine spike and bells; La Neige, pure white, tall, fine; Duke of Wellington, double, pale rose, excellent; City of London, creamy rose, double, towering spike, massive bells; Lady Derby, white; Double Grand Vainqueur, distinct and good; Pieneman, blue, fine bells; Leonidas, blue, excellent; Mimosa, blue; Laurens Koster, double, blue; "Sir" John Bright, blue, like Couronne de Celles; "The First," double pink, fine bells; Lord Melville, dark blue, white eye, distinct; Von Schiller, red; Josephine, bright crimson; Florence Nightingale, pink, fine; Koh-i-noor; Grandeur à Merville; Howard, orange crimson, superior; Lord Palmerston, lavender; Grand Leo; Gigantea, pink; and Blackbird of the Back. The best of the Tulips are Vander Neer, Vermilion Brilliant, Proserpine, White Pottsbakker, Keyser's Kroon, Rose Louisiane, Wouverman, Queen of the Violets, Joost Van Vondel, and Fabiola. Altogether the "Hightate show" is an attractive one, and is affording pleasure to numerous visitors.

MESSEURS. CARTER & CO.

This firm has grown and exhibited bulbs largely, but their collections at Regent's Park were a few days "behind time," and the spikes have considerably developed since they have been placed in the Royal Aquarium, Westminster. They are arranged on large tables surrounding the fountain at the east end of the building, and are the prominent feature in the decorations of the structure, and will be a source of great attraction to visitors during the Easter holidays. It does not appear as if any special attention had been bestowed in selection, cultivation, or dressing, the collection being a fair example of Hyacinth production under ordinary treatment, and such that is usually given in the majority of gardens. The following are the best varieties in their respective colours:—Whites:—Alba Maxima, the Superbissima, La Grandesse, Innocence, Madame Van der Hoop, Miss Nightingale, and Snowball. Reds:—Garibaldi, Linnous, Prince Albert Victor, Romeo, Victor Emmanuel, Vurbaak, Koh-i-noor, and Von Schiller. Blues:—King of the Blues, Marie, Blondin, Czar Peter, De Candolle, Garrick, Lord Derby, and Van Speyk. Yellows:—Ida, Bird of Paradise, and La Citronicre. Blackbird, new and intense silky black, and Starlight, new, a splendid dark blue with light eye, are especially noteworthy. The Tulips are—Joost Van Vondel, Lac Van Rhyu, Royal Standard, Vander Neer, Vermilion Brilliant, and White Pottsbakker. A very effective display.

MESSEURS. BARR & SUGDEN.

This is the last, but by no means the least, collection to notice. The plants are now arranged in the large windows of the establishment of the firm at 12, King Street, Covent Garden, and are at times a cause of "street obstruction," so great is the crowd of sightseers. These Hyacinths by their "level excellence" were a surprise to many visitors to the Regent's Park Show, to which Mr. Barr's grower, with pardonable enthusiasm, had taken them without the "master's orders." These are truly London Hyacinths, having been grown in a small garden at Bury at the residence of Mr. Barr's skilful cultivator and decorator, Mr. Hill, who has attended to them, as it were, during his spare hours night and morning, he being engaged during the day in town. His labours have been most successful, for they are such plants as anyone may be proud of. In looking over the list taken of the most effective varieties we find that

every one of them are included in the names above given, and it is not necessary to repeat them. The Hyacinths mentioned may be regarded as the best varieties extant, and those requiring a selection have only to refer to the catalogues for such further information respecting them that may be required.

In the cultivation of Hyacinths, the first essential for success is sound, dense, well-matured bulbs—bulbs which have not been cheaply grown and cannot be cheaply sold. Large bulbs do not produce the finest spikes; Gigantea, for instance, always producing a small bulb and large spike, and so with many others. The mere size of the bulb is no criterion of the size of the spike it will produce. Procure bulbs clean, symmetrical, and heavy, and good cultivation will do the rest. For guidance on culture Mr. Douglas will doubtless contribute reliable notes at a suitable time. He must be justly regarded as amongst the most able growers of the day, for fine as are the collections noticed he has staged still finer spikes, excepting those of Messrs. Veitch, which were not entered for competition. The "shows" now noticed will remain attractive for the next ten days or a fortnight.

NOVELTIES IN THE ROYAL GARDENS, KEW.

ENKANTHIUS JAPONICUS, a comparatively new species, is forming a very pretty shrub in the Temperate house. It is deciduous, and the pure white globose flowers appear with the earliest expansion of leaves, which in the autumn assume various shades of yellow relieved with red. Though, perhaps, quite hardy, it may be used with effect as a companion plant for *E. quinquefolius*, one of the prettiest of our greenhouse shrubs when well developed. It was first discovered some years ago in the neighbourhood of Nagasaki, and was introduced by Messrs. Standish, who contributed a plant to Kew, from which a figure was first published in 1870.

Calliandra hemocephala though not new deserves notice as a rare and beautiful shrub with slender and graceful branches, now flowering in the Palm house. The flowers are collected in clusters, and produce a mass of stamens of the most brilliant scarlet changing to deep blood red. It is of easy culture and strikes freely from cuttings; being of rather lax habit it requires cutting-back to form a well-furnished specimen.

A large number of Orchids are in bloom, and several are represented by very fine varieties. The unusually fine form of *Dendrobium crasinode* still continues in flower, though now nearly over. A fine plant of *D. Pierardii* has several stems well laden with bloom. It presents a peculiar though pleasing combination of colour; the stems are white, and the flowers creamy white and purple. *D. lituiflorum* is rare and also desirable. *D. Devonianum* is one of the most brilliant of all now in flower, but will scarcely give way to *D. Wardianum* and *D. fimbriatum*. *D. Farmeri*, *D. densiflorum*, and the varieties of *D. noble* are also good. Of *D. densiflorum* an extremely fine plant will soon be in bloom. *Cattleya Trianae* is represented by at least six distinct forms. One of these is nearly pure white and another rich purple with great breadth of segment, between which the others are intermediate in colour, and differing also in the relative size of the parts of the flower and the undulation of the margins. *C. Lindleyana* cannot be compared with this point of beauty, it has the appearance of having been pink but washed nearly white.

The *Odontoglossums* contribute a large share to the present show of flowers. *O. Pescatorei* and *O. luteo-purpureum* have fine spikes. *O. pulchellum* and the variety *majus* are famous for their white blooms. In baskets are *O. Rossi* and *O. Phalœnopis*. The other kinds are *O. odoratum*, *O. cariniferum*, *O. cristatum*, and *O. cordatum*. Of *Lycaste Skinneri* there is a particularly fine dark variety. The *Oncidiums* are not now numerous, but *O. encellatum* var. *grandiflorum* is fine in colour and form, if not one of the most showy. The orange *Epidendrum xanthinum* is almost the only Orchid now in flower of that colour. The purple *E. evectum* and the pink *E. elongatum* are also good. Forced Orchids are scarcely thought of, but the hardy North American species appear to stand the treatment well, and are certainly worth having at any season, particularly *C. spectabile*, which is now flowering. *Angreum falcatum* is very charming; it thrives on a block, and the pure white flowers are produced in a tuft of narrow curved leaves. *Restropia elegans* is quite a gem in its way, it is smaller than *R. antennifera* but more richly coloured. *Stenorrhynchus speciosus* is a rare terrestrial Orchid, and is now in flower in company with its variety *maculata*. The *Phalœnopis* are *P. amabilis*, *P. grandiflora*, *P. roses*, and *P. Schil-*

leriana. Other of the most ornamental Orchids are *Vanda savais*, *V. tricolor*, *Angulca Clowesii*, *Calygoe flaccida*, and *Ada aurantiaca*. Nearly one hundred species and varieties are in bloom.

Musa sanguinea is flowering in the Victoria house, and so exhibiting its beautiful scarlet bracts, which make it, as regards colour, the finest of all. It has the advantage of being extremely dwarf, attaining to no more than 3 or 4 feet. If allowed, the suckers will nearly equal the main stem, but for the sake of symmetry and a fine inflorescence it is best to have them removed. Like all the other *Musa* it delights in liberal treatment at the root with a warm moist atmosphere. It was received from Upper Assam, and was made known for the first time in the "Botanical Magazine" of 1872. Few plants have been distributed, and it is still extremely rare.

In the Cape house are several plants of interest and beauty. *Moricandia sonchifolia* is a new and extremely pretty dwarf Crucifer with violet flowers and pale foliage. Sown in autumn in a cold frame it grows into neat specimens for spring decoration. It requires a loamy soil, and only one plant should be grown in a pot. It is nearly, or perhaps quite hardy. *Amphicome Emodi* is an old plant of rare occurrence. It is of very dwarf habit, and amidst a mass of Burnet-like leaves appear the large pink flowers, which much resemble a *Bigonia*. *Dietsa Huttoni* is a new Irid with yellow Iris-like flowers; it grows about 3 feet high, and is quite distinct in its habit of growth from other species.

Xanthorrhiza minor is much the most important as a botanical novelty that has appeared for some time. A flourishing specimen is grown in the Succulent house, and forms a tuft of dark green wiry leaves. It is aculeate, and spreads below ground much the same as a Grass. The flowers are white and star-like, collected in dense spikes on scapes a foot long. It is native of New South Wales and Victoria, and sometimes take entire possession of the ground. In some years it is very abundant in flower, while only few spikes can be found in other seasons. This species has not been flowered in the country before. *X. hostile* flowered at Kew in 1853, and *X. quadrangulata* in 1873. These and other species with tall trunks are called Blackboy and Grass Gum Trees in the Australian colonies, where they form a peculiar feature in the landscape. The lower leaves get burnt off by bush fires, and they have then been mistaken for black men; the tall flower-stems help the deception by seeming as spears in their hands.

GLAZING WITHOUT PUTTY.

I THANK Mr. Hardcastle for his useful communication on page 196. I have seen many houses glazed without putty, and with the squares butted together instead of overlapping, and have been assured of the efficiency of the plan. I only described, however, my actual practice of glazing without top putty, and have found the plan perfectly satisfactory. Mr. Hardcastle has found his mode of glazing equally efficient, and were I erecting another house I should not hesitate to adopt the plan he has so clearly described.

I think the cutting of the squares aslant is a good idea for directing the water where it is required to be carried away. I remember once the same object was sought to be effected in a range of large houses where I was then employed by cutting the squares half-moon-shaped—elliptical, for the purpose of conducting the water down the centre of the glass so as to avoid its saturating the putty, and as preventing the expense of replacement. The object was certainly answered as to the guidance of the water, for the whole of it drained down the centre and the putty was consequently preserved; but there was no saving of expense, for owing to the water freezing just in the centre of the laps many of the large squares cracked quite up their centres. I have been in the house during a frosty night and observed them break one after the other in rather rapid succession. The glass used was too thin and weak for that mode of cutting the squares, and my experience tells me that if elliptical glazing is adopted strong glass must be used or breakage must be numerous. I mention this now because my attention has been directed to a case where this mode of glazing has been recommended, and there may be others contemplating its adoption. It will save the putty, but at the expense of the glass, unless the latter is very sound and strong. My plan, however, is to save the putty by not using it, and to trust to painting to protect the wood. If putty is employed paint also must be used, and much oftener than when putty is dispensed with.

Those who desire to erect houses as cheaply and efficiently as possible will do well to give some attention to the mode described by Mr. Hardcastle, for I believe his plan to be both simple and good.—STEWART AND GARDENER.

PRIMULA MARGINATA.

SILVER-EDGED AURICULA.

THIS species differs from *P. auricula* in having narrow leaves; from *P. glutinosa* in the shortness of its involucrem;



Fig. 31.—*Primula marginata*.

from *P. villosa* in having leaves much narrower, perfectly free from hairs, and in the colour of its blossoms, which approach that of the Lilac, but more especially in its disposition to become mealy, particularly on the edges of its leaves between the serratures, where it is so strong as to make the leaf appear with a white or silvery edge. As this character is constant to it, and not to any other species of *Primula* that we are acquainted with, we have given to it the name of *marginata*.

Mr. Lee received it from the Alps in the year 1781, and it has continued in our gardens ever since unaltered by culture. It is a very delicate pretty plant, with a pleasing musky

smell, and flowers in March and April. To succeed in its cultivation it should be placed in a pot of stiffish loam, mixed with one-third rotten leaves, bog-earth, or dung, and plunged in a north border, taking care that it does not suffer for want of water in dry seasons: thus treated, it increases by its roots nearly as readily as the Arnicola, and may be propagated by parting its roots early in April or September.—(*Botanical Magazine.*)

AURICULAS—THE WOOLLY APHIS.

BEFORE entering on a subject very painful and distressing to an Auricula grower I should like to say how thoroughly I endorse what my friend Mr. Horner has said on the subject of showing Auriculas with crutches. I have been brought up in the "straightest sect" of the old school, and such an idea would amongst them never have been for a moment entertained. I was not at the committee meeting when it was so recommended, and Mr. Horner must not class me as amongst the upholders of a practice I have invariably condemned.

I mentioned last week that I should overhaul my plants and report on them. The first that I examined looked so exactly as if the threads of a fungus had attacked the roots that I was hopeful such might be the case, and sent them up to Mr. W. G. Smith. His reply unfortunately was, "The Auricula roots clearly have a sort of American blight or mealy aphid upon them; it is very curious under the microscope, and might possibly repay close examination. But I find there are only twenty-four hours to the day." So the matter was settled. Had it been fungus I might have hoped that there was something wrong in the soil and that a complete change might have rid me of it, but against this pest there is apparently no security. I suppose there are Apple trees in most gardens, and if there are, the aphid may at any time descend into the frames. I find that the first symptom of mischief is a sort of brownish rusty colour on the back of the leaves and a disinclination in the plant to open the heart. On examining I found the roots more or less covered with the white woolly threads. This white stuff becomes more full towards the middle of the wig of roots, and then the tap root, or carrot, shows signs of having been eaten and is decayed.

Mr. Horner says "Why those weeps?" I think if he saw my collection now and had seen it last year he would hardly refrain his lamentations. *Inter alia*, I had a dozen good plants of George Lightbody, nine are irrevocably gone. I have lost every plant of Maria, several of Smiling Beauty, &c. May I ask my fellow sufferers if they would kindly answer the following questions?

1. Are their experiences the same as mine as to the course of the pest?
2. Have they seen the insect? I have as yet not been able to detect it.
3. Have they any Apple trees near their frames?
4. Have they repotted, after washing, their plants, and do they find that they are clear of it?

It is so serious a matter for Auricula growers that one would like to elicit all the information possible.—*D., Deal.*

"*D., Deal.*" asks if any of the readers of the Journal have seen the woolly insects that attack the Auricula roots; and I should like to add another query—if it be truly an aphid, and if any have seen it in a winged state. The notice of this enemy by Mr. Horner in the "Florist and Pomologist" of last October has been referred to, and I also see in a back number of that periodical, page 136, June, 1872, the following remarks from the pen of an able cultivator—Mr. John Ball of Slough:—

"Old rotten cow dung has generally been considered an excellent thing for Auriculas, but I have determined to abandon the use of it in consequence of its sometimes containing a most destructive small white grub, which secretes itself under the soil, and unobserved will divest the plant of every root it has, thus causing it to become sickly and to die away gradually. I have sometimes found these grubs to be very numerous, and was obliged on one occasion to shake out and repot every plant in order to get free from this most troublesome pest." Perhaps, if this meets his eye, Mr. Ball will correct me if I am wrong in assuming this "small white grub" here referred to to be identical with the enemy I now describe.

My experience is that it spreads itself numerously in colonies along those parts of the roots where the crocks form drainage, or where a space between soil and pot allows room and air, and

in a few instances on the collar of the plant, where, though it tucks itself as much as possible out of sight, it ought to be seen at once.

The insects are very small and sluggish, though clearly discernible to the naked eye. The head is proportionally blunter and broader, and has shorter antennae, and the legs are shorter and stouter than in the green aphid. These legs and antennae are blackish, but the abdomen is globular and of a dirty yellowish white colour. From the upper posterior portion of the abdomen grows a fluffy secretion in tufts of pure white wool, something resembling in growth and position an ostrich's tail. When touched these tufts are easily shed, and seem, when worked round the Auricula roots, to form the white blanket-like home in which the insect lives.

The proboscis or sucker is long and reflexed under the body between the legs like that of the green aphid, and is not very easy to distinguish even through the microscope, a large part of its length being of the same nondescript colour as the body, the point only being blackish; but it is the formidable weapon through which the young fresh juices of the root are sucked up, and I need scarcely say that the infested roots soon lose their vitality—dry up and die.

The minutiae of Nature are so beautiful and wonderful under the microscope that I propose to devote a couple of alpages of small value for an experiment as food plants for this insect, thoroughly to isolate them by a quarter of a mile's quarantine from my collection, to watch them, and I hope by this to learn something of the life history of this insect.—*JOHN T. D. LLEWELYN.*

[Oblige us by reporting the result.—*EDS.*]

FLOWER-SHOW FIXTURES—A GRIEVANCE.

It is very strange and unfortunate that two Societies of such distinction as the Royal Horticultural and Royal Botanic, whose objects are to foster and promote the science of horticulture, should fix their dates the same as was the case on Wednesday last week, and will be the case at every meeting of the Royal Botanic throughout the present year. This clashing cannot but be detrimental to both Societies. It is disliked by exhibitors in general, for they are put to great inconvenience thereby, and it prevents many from making that amount of display which otherwise would be made were they not obliged to divide their favour. When horticulturists in general show such a disposition to exhibit it is greatly to be regretted that their conveniences have not been more studied by fixing alternate dates for the shows of the two Societies. In the present unfortunate state of affairs they are simply hindering instead of promoting horticulture.

It is true the Royal Horticultural Society does not at present offer prizes for competition, it may therefore be argued that they have no regular exhibitions; but their great sources of benefit and attraction are their fixed fortnightly meetings, where new, rare, and beautiful plants are exhibited and rewarded accordingly. These meetings are of the greatest importance, and I cannot help regretting the clashing of the dates in question. I do not presume to suggest a remedy, others more competent may do that; but I should rejoice exceedingly if one or other of the Societies would exhibit their magnanimity by changing some of their dates and prevent their shows becoming comparative failures.—*J. W. MOORMAN.*

In the report of the last Royal Botanic Society's Show of spring flowers you remark that exhibitors, visitors, and others expressed their disappointment at the two Societies meeting upon the same day; and you were quite right in this. You might have gone further and said that blame was attributed first to the managers of one Society and then to those who have charge of the arrangements of the other, according to the feelings of those interested. For my own part I do not see how anyone was to blame, certainly not the Council of the Royal Horticultural Society; their dates of meeting have usually been on the first and third Wednesday in each month, but as it was well understood that they were only to be committee meetings no doubt the managers of the Royal Botanic Society thought it would not matter if their shows were held on the same dates. Had South Kensington first announced a Hyacinth show the other Society would as usual have chosen the following week; but this is, as a rule, too late in the year, and the beauty of the flowers would have been past. Had they selected the 14th it would have been better for all, and a

much better show would have been held at Kensington on the following week.

One other remark I would like to make, and am sorry that it is in the way of a complaint. In your reference to the show of Polyanthus-Narcissus you mention the "made-up" potsful of plants shown by Messrs. Barr & Suggden, which they certainly were, and I consider that their grower was guilty of a breach of honour; for no one can believe that Mr. Barr would be guilty of taking an undue advantage of an opportunity. Still, a certain amount of blame rests with the Society for not clearly defining what they mean by a pot of Tulips. Nurserymen and gardeners know very well what it means at the metropolitan shows. It has always been understood and acted upon as three bulbs potted and shown in the pots in which they were grown. Competitors have hitherto acted on this principle and exhibited on equal terms; and it is taking a mean advantage for a man to say, "My opponents will show only three roots in a pot, I will put six plants in a pot of the same size, and even if my flowers are not quite so good as theirs perhaps my quantity will overpower their quality." In Tulips Messrs. Barr & Suggden showed twelve more roots in their collection than either of their opponents, and the plants were hanging their leaves before the show was over. Their Tulips were made up the same as the Polyanthus-Narcissuses. Of the last they exhibited seventy-two plants, while my collection contained but forty. Now I hold a very decided opinion on this innovation; it ought to be stamped out at once. There will always be those ready to take advantage of any flaw in a schedule, and one line will save endless bother to exhibitors. It ought to stand thus:—"Hyacinths one bulb in a pot. Tulips and Polyanthus-Narcissus three bulbs." Unless this clause is put in the schedule one exhibitor may show three next year and his opponent thirty.—J. DOUGLAS.

Few complaints are perhaps advanced on which there is a general concurrence of opinion, but a grievance which I think is quite beyond controversy is the one existing and now mentioned of the principal London flower shows being held on the same days—I mean the exhibitions of the Royal Horticultural and the Royal Botanic Societies.

In your reports of last Wednesday's meetings the circumstance was regretted that two shows, one in the north and the other in the south of London, should be held simultaneously. Nothing could be more inconvenient to exhibitors and visitors, or more weakening to the shows, than that strange arrangement. I am one of several who were desirous of exhibiting at both places, but could only visit one; in fact, only the very largest nurserymen are able to divide their resources and exhibit creditably in two places at once, and even to them duplicate showing is inconvenient.

The racing backwards and forwards of several visitors between north and south on the 21st inst. was a source of much annoyance to them. No good, however, can be done by dwelling on the past and its unfortunate oversights. It is to the future to which I would rather direct attention. On the 18th of April there is the same clashing of fixtures, and again on the 16th of May; I believe also that a similar collision occurs on the day of the National Rose Show in July. What a prospect for exhibitors! But cannot the evil be averted? If it is an evil, and few can dispute it, the more promptly the remedy is applied the better. But to whom are we to look for aid? The answer appears to me: Appeal to headquarters, and the acknowledged head of horticulture is the Council of the Royal Horticultural Society. But for what are we to appeal? simply a change of days for their meetings, and the matter would be settled.

The present Council have shown such a disposition to consult the convenience of horticulturalists, and thereby have secured their sympathy and substantial co-operation, that it is not conceivable that the Council would refuse to listen to any representation having for its object the means of better supporting the shows. From the fact that the Royal Horticultural Society have simply adhered to the regular dates they can the better afford to accept the change, which could not in any sense be interpreted as admitting an error when no error had been made by them.

What is there in a "Wednesday" that it should be regarded as specially fitted for a floral festival? In my opinion—an opinion which is shared by other exhibitors—the Society that first adopts the day preceding will possess an advantage in more ways than one; that, however, is for others to judge. The present position, or rather future prospects, are extremely

unsatisfactory, and now that the matter is broached it is hoped that some of the leading patrons of shows will bring their influence to bear in removing a real grievance which acts disadvantageously for themselves and prejudicially to the societies, which all are desirous of seeing prosperous.—AN EXHIBITOR.

[Until recent times Tuesdays were the meeting days of the Royal Horticultural Society. Some of us can still remember the Regent Street Tuesdays, and for some years after the Society seated itself at South Kensington this was the day of meeting. We see no reason why the Society should not revert to the old arrangement. By holding the meetings on Tuesday exhibitors do not have their week so much broken into, and the routine of their establishments so much interfered with.—EDS.]

CULTURE OF THE HIPPEASTRUM.

THE essential point in the cultivation of this genus (which is very distinct from *Amaryllis*) lies in the comparatively new method of ripening the bulbs gradually in the open air.

We will suppose a batch of plants in flower now and in succession for several weeks in their warm quarters in the stove. After flowering let them remain a little shaded and removed from that part of the house which they no longer ornament. Keep them here till the leaves, or the greater part of them, have become fully grown and firm. This period will come on about the end of May and onwards for a week or two. Next, remove them into the greenhouse for three weeks or a month, where the leaves will become stiff, strong, and healthy. This will bring us into July, when the plants must be removed into the open air, preferably at the foot of a south wall, and watered every day or two during hot weather.

If September brings hot weather leave them alone while it lasts. If not, take them into the greenhouse for the winter at once. The plan here described is not my own, though I have long practised a hardening system of the kind. It was taken from an article in one of Van Houtte's catalogues, and has been now tested here for several years with the best results. A horticultural friend in my neighbourhood sent me twelve of these plants last spring to try the system upon. He had had them ten years without flowering one. Six are now flowering strongly, and the rest are in the highest of health.

I omit much detail, confining myself to essentials. Any person conversant with gardening under glass will know what to do as to general good treatment.

I should feel grateful to any friend who could send me *H. solandriiflorum*, *reginæ*, or *equetro*, true.—R. TREVOR CLARE, Welton Place, near Darenty.

FORCED SALADING.

THERE are many employers who require salads of different kinds all the year round. For many gardeners this is not a very easy task, especially for those who have not the glass accommodation to grow what is required for their employers' table during the winter months. A very simple plan where glass structures were rather limited and salads were required on most days all through the winter months was adopted in a garden in which I was formerly employed.

In the first place we made some small shelves and affixed them close under the glass about the middle of the houses, in our vineries, &c. Here we had our small salading in pots (18's and 22's), such as Australian Cress, Lamb's Lettuce, Mustard and common Cress, Badsishes, and Onions, making sowings every week or fortnight, placing the pots in a vinery or Peaseh house just started till the seed germinated, then removing to cooler houses, and watering carefully. Watercress not being procurable within two miles of the gardens, and being often wanted, my superior, Mr. Batters, thought he would try this also in pots, and met with great success. The pots used were 32's, filled three parts with moderately rich soil; on this was placed some sharp sand or road washings. The cuttings were inserted thinly in the pots and placed on low shelves in the early vinery and Peaseh house. In a few weeks we had plenty of clean and fresh Watercress without having to walk two or three miles in search of some by the riverside. Since the time we tried the experiment they have never been without this desirable Cress winter or summer. We made fresh pots of cuttings every season from the old plants, and when the young plants had made good growth the older were thrown away. If kept well watered they will be found to grow very fast, especially with the advantage of a warm house for starting them, when they should be removed to cooler struc-

tures to assume a good colour and flavour. Watercress thus grown was preferred to riverside Cress. The varieties of salad herbs—namely, Burnet, Chervil, Tarragon, Parslane, &c., we also kept in pots during winter.

With some good Lettuce from the frames, blanched Batavian and curled Endive, and a good Cucumber (of the latter I gave some cultural remarks in a former volume of 1875, page 180), we could at any time make up a good salad for the table. Before being sent into the house the salads were washed in clean water and arranged in a round wicker basket and placed in the fruit-room, where our employer generally inspected them before they were sent to the kitchen. To Mr. Batters, the able gardener of Chilworth Manor, under whom I then served, I am much indebted for my cultural knowledge of forced vegetables and salads.—F. H. FROUD, *Gardener, Hawley Place, Dartford.*

[You could not have had a better teacher.—Eds.]

CLEMATIS JACKMANII.

I PRESUME there are very few places where there is a superabundance of this beautiful and effective climber, and it may be useful to call attention at the present time to a sure and ready means of increasing the stock of plants.

Anyone in possession of an old plant will find that by taking the young shoots about 4 or 5 inches long, breaking them off with a heel, and inserting them in pots or pans, and placing them in a close frame until they callus, they will afterwards if placed in heat emit roots freely, when they must be potted off, and when they are established in pots they may be planted out, or if grown-on in pots they will make strong plants for planting out the following spring. *C. Flammula*, *C. lanuginosa*, and other varieties I have propagated in the same manner. Nurserymen generally graft them on strong-growing varieties, such as *Clematis montana*.

To grow the Clematis to perfection liberal treatment is necessary, and plenty of manure must be added to the soil. There is nothing more beautiful for covering walls, rockwork, arches, or planted along with Ivy for covering walls, &c., than *Clematis Jackmanii*.—J. ANDERSON, *Hill Grove.*

ALPINE AURICULAS.

ALL of us are indebted to the Rev. F. D. Horner for his excellent article in last week's Journal, and for the kindly spirit which it breathes. I desire to observe that I did not say florists had no right to make distinctions; it would be utterly folly to say so. Of course they must, and abide by the distinctions too; and further, I believe that the rules laid down by florists are in the main correct; but we must not strive for one particular style of beauty at the expense of another. This is what I object to in the self Alpine. If my premises are correct the exhibitors at the National Auricula Show would not exhibit a self flower, nor would they try to improve it. Now, many persons think that the selfs are as beautiful in their way as the shaded flowers, and certainly they ought to be grown and exhibited for the sake of variety. Mr. Horner also would allow Alpines to have their trusses supported by sticks. Well, some of them require sticks and some do not, and if they can be produced with a firm, elastic, self-supporting stem, why not for this as well as for shaded edges?

Then, as to the Polyanthus, I hope I am not misunderstood with regard to that flower. I did not, nor could I say, that flowers of the old florist type had been surpassed by any modern introductions, nor do I prefer the modern varieties. All that I claim is that they may be allowed to compete, and let them be judged on their merits. Excluding them from a show would be so much loss to floriculture, just as in the case of self Alpines. The old florist Polyanthus is a singularly beautiful flower, but it lacks variety. As Mr. Horner puts it, "it wants seeding up," and no one could do this better than himself. It is worth a long journey to see the well-grown plants of the sorts he has named in the vicarage garden at Kirby Malzeard.—J. DOUGLAS.

I HAVE been much pleased to read the discussion on these flowers in the Journal, and would ask leave to contribute my mite to it. Mr. Horner says in the "Florist," "If self Alpines why not Alpine selfs?" Well, I have very great respect for Mr. Horner, but it seems to me that in this matter his knowledge is fettered by his surroundings. If self Alpines are to be

tolerated Alpine selfs will naturally follow. Is not a greater variety thereby gained? Assuming of course that the cardinal points of the florist are maintained, is not the existence of variety the strongest claim to our admiration? I say it is, and I am sorry to believe how few florists there are who understand the philosophic ground on which the properties of flowers are based, and how much they are tied and bound by practice and prescription.

The term Alpine contains no meaning of itself, therefore it is no special symbol to anyone versed in the terminology of the florist. No doubt a shaded edging is more to be regarded than a self, because it contains more variety, just as a bizarre Carnation is preferred to a flake, and a flake is placed before a self.

Mr. Horner's reasoning in the case of the Auricula seems to cut at the root of variety, and by refusing to admit any but established classes to be taking a course which would surely result not in maintaining the philosophic properties of flowers, but in cramping them, and justly exposing florists to the imputation of being crabbed, ignorant, and narrow-minded.—NEMO.

POINSETTIA PULCHERRIMA PLENISSIMA.

IN a recent number of this Journal was published a short article on Poinsettias, and therein it was stated that after a little more experience I should give some account of the new variety *A. p. plenissima*, of which I had plants late in the season. They were small and not such as in the other variety would be expected to give good heads. Farther, they had been grown up to the time I had them (which was about the last week in June or first in July) in a stove temperature, and that treatment does not give the best results. I prefer growing them in an airy greenhouse near the glass until the end of May or early in June, when they should be turned out of doors, but not to be exposed to cutting winds. Early in September they must be removed indoors, but not into a high temperature, until the colour shows on the floral bracts, when the night temperature may range from 55° to 65°. As far as I have been able to judge, the new variety requires rather more heat than the old sort when the bracts are in the course of formation, but not at any other time.

My own opinion of it is that it will displace the old sort. It is very much superior to it, not only in lasting qualities but in the greater brilliancy of the floral bracts. The outer bracts of the old sort have fallen six weeks ago, and more recently the new plant has also lost the outer circle; but the supplementary tufts are now (March 21st) quite brilliant, and form a compact head of lustrous beauty. I have sent a head for your inspection, and when I say that it was cut from a plant which was in a very weakly state in July last year, you will then be able to judge of its value.—J. DOUGLAS.

[We judge favourably. Since a head so fine as the one submitted to us has been produced by a weakly plant, what may we not expect from a robust specimen? This Poinsettia being a new plant has been necessarily over-propagated, and another season is required to produce heads in their true character.—Eds.]

PLANTING GLADIOLUS BULBS.

THERE appears to exist some difference of opinion as to the better mode of planting these bulbs—namely, whether they should be entirely stripped or not of their outer covering. The opinion of some of our leading growers would be instructive to many of your readers. As a small grower of the choicest varieties, my own plan is to plant about the first week in April if the ground be fit, placing the bulbs about 4 inches deep, having previously stripped them, and covering with silver sand before filling in with soil. Can any growers of more experience give better information?—EXHIBITOR.

ROYAL BOTANIC SOCIETY OF LONDON.

THE Royal Botanic Society was founded in 1839 by a Royal Charter granted by the Queen to the then Duke of Norfolk, the Duke of Richmond, Earl of Albemarle, Col. Rushbrooke, Philip Barnes, and James De Caille Sowerby (who were also named the first Fellows of the Society) "for the promotion of botany in all its branches and its application to medicine, arts, and manufactures, and also for the formation of botanical and ornamental gardens within the immediate vicinity of the

metropolis," the Duke of Richmond being named in the charter as the first President, followed in 1841 by the Duke of Norfolk, in 1855 by the Prince Consort, in 1862 by the Earl De-la-Warr, and in 1869 by the present President—H.S.H. the Duke of Teck.

The garden, which comprises the whole of the inner circle of the Regent's Park, a little over 18 acres, is held on lease from Her Majesty's Commissioners of Woods and Forests, first granted in 1840, and since renewed at an advanced rent. Before the Society entered on the land it was in the occupation of Mr. Jenkins as a general nursery, the Society paying him a considerable sum for the stock, &c. At that time (1840) the garden was a flat piece of ground with a gentle fall from the centre to the sides, one gravel walk crossing from east to west, a circular walk of about the semi-diameter of the outer circle or fence, and two small lawns, a few large Elm trees, Horse Chestnuts, Planes, Thorns, Birch, Weeping Ash, and

fruit trees; the soil—a cold, stiff, yellow clay—had been only partially cultivated. In that year (1840) Mr. Robert Marnock (recommended to the Committee by the well-known and respected J. C. Loudon) was appointed to lay out the garden, the first works being the digging of the lake and the general alteration of the flat surface of the ground. In this Mr. Marnock so admirably succeeded that most visitors to the gardens look upon the undulations and curves rather as the work of nature than of art.

The garden is ornamental and park-like in appearance. It has been so judiciously planned and planted that it looks much more extensive than it is, especially as it merges into the surrounding scenery, the trees, shrubs, and lake in Regent's Park appearing as if they were part of the garden. Besides the broad straight gravel walk leading from the principal entrance to the conservatories there are winding paths leading to shady groves and pleasant retreats. The garden is instructive

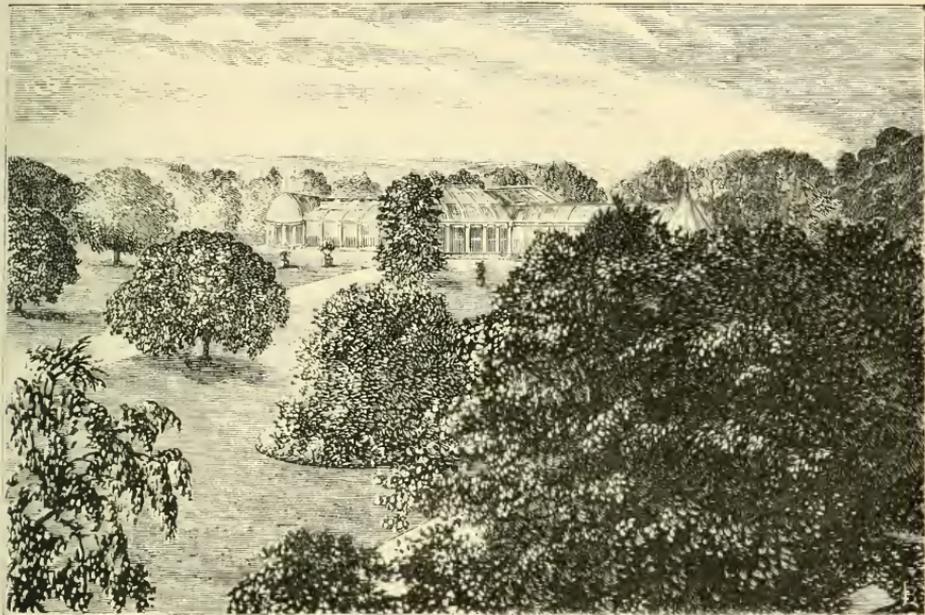


Fig. 32.—ROYAL BOTANIC GARDENS.

tive as well as being attractive, for the plants are arranged according to the natural system. There is also a flower garden for the arrangement of colours, a geographical garden, an exhibition ground, a winter garden or conservatory, houses for tropical, subtropical, medicinal, economic, aquatic plants, &c., all well stocked with specimens.

The first portion of the conservatory was built in 1846 from the joint design of Mr. Decimus Burton (the Architect of the Society) and Mr. Richard Turner, by whose firm at Dublin the whole of the work was executed; in 1871 the east wing and corridor were added, and in 1876 the west wing was completed, both these additions being executed by Messrs. Turner. The entire structure, with the exception of the corridor, is of glass and iron, and measures 235 feet in length by 100 feet in breadth.

The summer exhibitions of plants, flowers, and fruit commenced in 1843, and of spring flowers in 1859, have been continued to the present time. Exhibitions of Rhododendrons planted in the ground were begun in 1849 and continued up to 1874, when special exhibitions of Clematises, Roses, &c., were introduced.

Botanical lectures in the museum, commenced in 1853 by the lamented Professors Edward Forbes and Arthur Henfrey, are now continued by Professor Robert Bentley.

The gardens, owing to their near vicinity to the medical and

other schools of London, have for many years been of much service in supplying illustrative specimens for the use of professors, teachers, &c. Students of all kinds and artists duly recommended are admitted freely to the gardens. Nearly five hundred free orders were issued last year for terms of from one to six months, and in 1875 nearly 33,000 out specimens were distributed to teachers and students.

The range of houses (150 feet) in the garden of medicinal plants, built by the present Secretary in 1874, already contains one of the best collections of economic plants.

Highly is the Society indebted to the zeal and abilities of individuals whose names are familiar, especially to James de Carle Sowerby the late Secretary, and William Sowerby his son, the present Secretary. The excellent Secretary, His Serene Highness the Duke of Teck, has greatly contributed to the welfare of the Society; the garden has also an able superintendent in Mr. W. Coomber.—NATHAN COLE, Kensington.

RHODODENDRON NUTTALLI.

THERE is a healthy well-grown specimen of this eby-flowering shrub now in full bloom in the conservatory attached to the residence of the Misses Cattle at Cleydene, near Edenbridge, Kent. At the time of my visit there were four trusses, each 14 inches in diameter, with fully expanded flowers and one or

two others advancing; the individual blossoms, of a rich creamy white and powerfully scented, measured 7 inches in diameter and nearly as much in depth. I was told by Mr. T. Neil, the civil and intelligent head gardener, that with one exception he had succeeded in flowering this specimen every year since it had been under his management. The plan he adopts is to allow it to complete its growth in the conservatory. It is then removed to a sheltered spot in the open air, and allowed a moderate amount of water and exposure to the sun. Before the autumn rains set in it is placed in a cool vinery, where it remains until the early spring. When the blossom buds commence swelling it is removed to the conservatory, freely supplied with water, and in a short time the scales are cast off and the blossoms become fully expanded. The specimen at Clevedon, which is over 7 feet in height, is grown in a 14-inch pot.—EAST SUSSEX.

THE ROYAL HORTICULTURAL SOCIETY OF ANTWERP.

THE 128th Exhibition has been recently held, and notwithstanding the early period of the year the Show, by the diversity, beauty, and abundance of the plants, was a great success. The splendid room of the Royal Society of Harmony, in which the Show was held, presented a dazzling appearance, and the cold rigid weather out of doors made a singular contrast with this attractive garden. A detailed account of the Exhibition is not necessary for English readers, therefore only the more prominent collections will be mentioned.

Let us speak firstly of the amateurs. Mr. Beaucorne of Eoanme carried off the palm of the day. He staged remarkable Orchids, magnificent Conifers and ornamental plants, with Azaleas and Camellias of uncommon excellence. The Ericas, Epacris, and New Holland plants of the Baron de Caters, the honourable President of the Society, also Orchids, Palms, &c., and especially the Orchids of Madame Le Grelle-Dhanis, obtained general admiration. A brilliant collection of hybrid Amaryllises raised by Mr. H. Vander Linden charmed all spectators. Abundant foliage, glossy colours, fine forms, and strong flower stems were combined in these handsome flowers. Mr. Linden also exhibited a seedling *Crimm* that we esteem one of the fairest of that kind. The excellent Azaleas and *Cinerarias* of Mr. Flor. Pauwels were noticeable, and still more so his splendid group of hardy *Rhododendrons*. Amongst them Prince Camille de Rohan displayed its enormous crown ornaled with more than four hundred flower trusses. The fine varieties of Conifers, *Acacias*, *Eucalyptuses*, and *Pelargoniums* of Mr. Riegle, the elegant collection of Count de Bergeyck's hardy plants, the splendid *Anthuriums* and *Cycads* of Mr. Vander Wouwer, the striking standard *Roses* of Mr. Van Bomberghen, the distinguished new Azaleas of Mr. De Graet of Ghent, with the superb *Cinerarias*, *Roses*, and *Cyclamens* of Mr. Everaert's, deserve all the most honourable mention.

The horticulturalists, too, contributed very much to the beauty of the exhibition. Mr. De Beucker furnished very fine *Phormiums*, extremely varied *Cactuses*, and a quite new *Maranta* from Brazil. Mr. L. Berckelaers won great success with his *Cyclamens* and his large group of flowering plants; Mr. H. De Benelaer also with his bouquets of natural flowers. Mr. Vuyleke at Loochristy, near Ghent, sent a most delightful collection of quite new Azalea indica, with an exquisite group of hardy *Rhododendrons*, truly magnificent plants, with large trusses of bloom, ranging from the purest white to the brightest red. The valuable collection of plants staged by Mr. Vander Mensch were highly attractive; and the variegated products and Conifers of Mr. Nagels produced an excellent effect.

And last but not least, a great number of artists ornaled their work with their pictures. Amongst them Miss Anna Peters of Stuttgart exhibited "Roses in Autumn," very charming. Mr. Matelck of Ghent and Mr. De Naeyer of St. Jans-ten-Noode also displayed their great talent.

Through this successful Show Antwerp proves once more that it has made, particularly this last year, rapid improvement in horticulture, and follows resolutely the bright way pointed out by Ghent, the famous Belgian flower city.

[An esteemed correspondent has favoured us with the above report, which will be perused with pleasure by many who are interested in the progress of Belgian horticulture.—EDS.]

EXPERIMENTS IN VINE CULTURE.

A PAPER on the above subject has been read at the Darlington Gardeners' Institute by Mr. Hunter, the well-known Grape-grower of Lambton Castle. Attracted by the reputation of Mr. Hunter, there was a very large attendance.

After a few preliminary observations Mr. Hunter said:—Some three or four years ago the influence of soil on Grape-

growing attracted a fair share of attention, and was criticised freely in the horticultural papers by practical men. It occurred to me that Grapes could be grown without soil, and I resolved to give such a method a trial, and soon after an opportunity was presented, and the experiment was made in a small house, 30 feet by 12. In the month of August, 1873, immediately after gathering a crop of Black Hamburgs, the Vines, which for several years had been severely forced, were taken out. Immediately inside of the front wall I had the old soil removed down to the drainage for a width of 4 feet; this was refilled with the freshest of last year's leaves and green cow manure pressed as firmly together as possible. The Vines were then planted, and a little soil was used to surround the balls; in November I added to the border 4 feet outside and 4 feet inside, made as before, when I found the roots quite encouraging. The material used was always in a green state, and this process was continued until last year, when the border was finished. I may add that top-dressing was often required than with beds made with soil, as the bed subsided more rapidly; the whole was covered with charcoal only for appearance, no soil being used.

After years of experience under the tuition of men famous in the Grape-growing world, I confess the compost described appears to be a most unreasonable mixture in which to plant young Vines. The first part of the border made has become a light black soil without any adhesive texture, and is soft and spongy when trod on. No doubt to some this experiment will appear very startling, more especially to those who condemn the practice of using manure in a raw state in the formation of a Vine border. But we are told clear-sighted men of science sometimes get into mental fogs and make comical displays. We are also told that one fact is worth a thousand arguments. Now the fact is, this border so prepared has produced fruit equal in every respect to what the house before produced, and to what houses of the same size are now producing where the borders have been prepared in the old way. The varieties planted were varied for experiment, and consisted of Dr. Hogg, Canon Hall Muscat, Barbarossa, Foster's Seedling, Black Hamburg, Duke of Buccleuch, Waltham Cross, and seedling. There was nothing in the Vines or fruit that would lead one to suppose that they were growing in any other than the usually prepared border. The Hamburgs were fine in colour and flavour, Canon Hall set like Hamburgs, and Waltham Cross had none of the small berries it often produces from imperfect setting. This Grape was good, and well liked at the table in February at Lambton.

In the latter end of August, 1875, I planted another house of the same dimensions as the one already described, and with a view of retaining the turf as long as possible in a fresh condition it was not broken up, as is generally done when making a Vine border, but put in the full size 12 inches by 9, commencing at the bottom and working upwards, placing the turves as a mason would bricks in building, and using cow manure as mortar. To quote the words of Mr. Westcott of Raby, when looking over the gardens at Lambton, after my explanation, he said, "Well, you have just gained a year on my young Vines," when only the year before I had congratulated him on their vigorous growth. I do not wish it to be understood that I prefer manure to grow Vines, and consider it better than other mixtures, but believe it to be good along with them, and that in my estimation no newly made border is perfect without it.

In the many gardening periodicals now published we have writers who may differ in their management of the Vine, but whose articles are hailed with interest and read with pleasure by those in pursuit of knowledge. If everyone was as fond of writing on the Vine as I am of reading about it, we should have a periodical devoted to the Vine alone. I read all the conflicting evidence on its cultivation, and hope that we may ultimately arrive at the perfection of Grape-growing.

Many ills are charged against an over-rich border, such as mildew, gross growth, watery shoots, badly ripened wood, an abnormal amount of pith, shanking, bad-coloured Grapes, and so forth; but when one ventures an experiment and finds it puts all these aside, what then? I cannot help thinking there is much to be learned; but when we are able to put our hand with more certainty on the causes which produce the ills the Vine is heir to, we shall become more able to remedy them. I am prepared to say that the constitution of a Vine depends more upon the internal atmosphere, the amount of moisture it is charged with, and the light under which it is grown, than upon the richness of the border; it seems to me

one of those plants which cannot be grown too fast or too strong. Some tell us it is not from the strongest wood we get our finest fruit. Granted in some cases, there being so many ways of growing and ripening the cases. While a house has every attention paid to it, properly drained, as a rule looked through in the evening, and a temperature of 65°, 70°, or 75° rigidly adhered to, kept in a close-growing atmosphere, and the Vines encouraged to make their growth in darkness instead of daylight, then come the watery shoots and an abnormal amount of pith. From such management the stamina of the Vine is reduced until tendrils instead of bunches are the reward. From the time the Vines commence growing a little air should be considered of the greatest importance, and the quantity should be increased as the foliage becomes stouter and able to endure it. A given temperature sufficiently high for the well-being of the Vine can easily be maintained with a requisite quantity of air to prevent what we call watery shoots, if encouraged and grown in sufficient light by day. I hope some day to find glasses used as extensively to indicate the strength of light as they now are to register so correctly the temperature."—(*Darlington and Stockton Times*.)

MINIATURE FRAMES FOR SOWING SEEDS.

ACCORDING to agreement I send you an account of my mode of raising seedlings, but I almost repent of having made that rash promise towards the close of my last letter. My plan is so common and so rude that I am half ashamed of writing about it; and I am only encouraged to do so by the system being useful and within the means of the humblest of cultivators.

When reading "correct guides" for raising tender plants from seed and cuttings—the "gentle hotbed" and mixture of "loam, peat, and leaf soil" in proper proportions—I often think the instructions cause much disappointment, especially to those who most need assistance and who possess no hotbed and dainty soils. Artificial heat both from coals and manure is of great value in gardens, especially when rightly applied as it is by good gardeners; but such heat is often misapplied, and indeed wasted, by using too much of it or using it too soon. I have seen and experienced the greatest injury from attempts to raise plants early, only afterwards to be checked and perhaps killed by the exposure to which they have been subjected. I rejoice in a frame and hotbed, and try to turn them to the best advantage; but I do not waste the heat and make tender plants more tender still by raising them in that frame, when I can grow them much harder and better by simpler means.

My first hint on raising tender flowering plants of all kinds, also some vegetables, such as Vegetable Marrows, ridge Cucumber, and Tomatoes, was afforded me by my stable boy. I sowed such seeds as I required, and placed the pots in the heated frame. The boy "for fun" sowed the residue in pots three parts filled with soil and plunged the pots in the manure heap in the stable yard, placing a piece of glass over each pot. My seeds in the heated frame germinated quickly, and the plants grew rapidly and tenderly. The seeds in the manure heap germinated more slowly, and the plants grew steadily but were wonderfully robust—so much so that their seed leaves were more than double the size of those raised in the heated frame. "The boy beat the master hollow" was the general verdict, and it was true. I have since adopted the boy's plan for several years with the best results, sowing the seeds in April; but I now have square seed pans and boxes of various sizes—wine boxes, cigar boxes, &c., over which the squares of glass fit more conveniently than over round pots.

All, however, may not have a manure heap in which to plunge the pots and boxes, neither is the manure necessary for raising the majority of the plants which are required for the flower and kitchen garden. If the glass-covered "miniatures" are plunged in the soil in a sheltered place, such as at the foot of a south wall, and seeds of Stocks and Asters and all plants of that nature, also of some perennials, such as Poly-anthes, Aubrietias, Delphiniums, &c., as well as of such vegetables as Celery, Cauliflowers, Lettuces, &c., are sown towards the end of April, plants will be produced which cannot be surpassed by the aid of the most elaborate convenience. The great point to attend to is not to sow too early, but so arrange that by the time the seedlings are an inch or so high—touching the glass—they can be exposed almost entirely to the then warmer weather. By adopting that mode of raising seedlings, and good subsequent cultivation, I have secured many prizes at local shows. Others may do the same. They may plunge

their large flower pots, or such boxes as they can find or make, and cover them with loose squares of glass, covering the glass with boards or mats (boards are the best) during frosty nights, and with good soil and good management they may raise plants "fit for a prince." I mean amateurs and cottagers may raise seedlings, or, in the summer, strike cuttings in this way better than by any other means at their command.

I may say a word as to soil. Like many others I live near a large town and cannot obtain "turfy loam, peat, &c.," but I am thankful to say that I can manage without it, perhaps as well as if I had it. In most gardens however small there is generally a barrowful or two of rubbish to be diepseed of. This rubbish on a suitable day in the spring should be burnt in an open place in the garden where the soil is good. If the fire is of moderate size the ground beneath it for a depth of 4 or 5 inches will be scorched. I do not pretend to know why it is so, but the fact is sufficient for me to know that scorched soil is always fertile. Well dig-up the soil where the fire has been, mix it thoroughly with the ashes, and run the whole through a sieve, and you have a compost for raising seedlings and for growing many plants that cannot be surpassed by any elaborate mixture of popular ingredients. Burnt soil is always free from worms and grubs.

As to sowing. First water the soil thoroughly with nearly hot water, and in an hour after sow the seed thinly. Thickly sowing small seeds cannot be too strongly denounced. Cover the seed very slightly, just and scarcely placing it "out of sight," and shade densely until germination takes place. The pots or boxes—"miniature frames"—being plunged will retain sufficient moisture without further applications of water until the plants appear—an important point in raising all seedlings, and especially those from small seeds.

Rude as this humble practice may be, I know it has proved successful, and my experience may be useful to those who covet a stock of healthy plants and who have not more regular conveniences for raising them.—GROOV AND GARDENER.

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 15.

IN this series of papers it would be scarcely fitting to pass by without mention the "Physic Garden" of Old Chelsea, for though it stood upon a different footing from other establishments which have been already considered, within its walls was one of the earliest nurseries of importance in the metropolis. Moreover, the Apothecaries' Garden did a good work for the promotion of horticulture during the period it was at its best estate, since others besides apothecaries and unledged medical men attended the demonstrations of plants given through a long series of years, and there was also frequently a distribution of exotics reared at Chelsea from seeds or cuttings which have found their way to gardens and parks in various counties of England. As yet the gardens are extant, though bricks and mortar so closely environ them that we cannot suppose they will long remain intact. By a negotiation set a-going during 1875 it was all but settled that the Metropolitan Board of Works should buy the land. Difficulties arose, however, and the matter fell through. For the culture of plants, evidently it is not worth while to keep the ground as it is, and ultimately the site will be built upon, unless some speculative person should see his way to the formation there of an aquarium or winter garden.

Before the Apothecaries' Company entered on the possession of the land which they have occupied for upwards of two hundred years, there was a garden of some kind belonging to them at Westminster. Under date of June 10th, 1658, Evelyn records a visit of his to the Medical Garden at Westminster, "under Morgan, a skillful botanist." But for his entry we should have known nothing about it, and there has been some debate as to whether this was simply an establishment for the cultivation of native medical plants required for the laboratory, or whether exotics had already been introduced. About this garden we read no more particulars; it was very likely situated on or near Millbank. The history of the Chelsea garden we can carry back a little beyond the date when the Company acquired it, for by an old map it may be exactly identified with a piece of arable land which Sir Arthur Gorges conveyed in the year 1647 to one Edward Cheyne. (This name seems to have been also written "Cheyne;") but it has nothing at all to do with Chelsea china.) I dare say Mr. Cheyne did not derive much profit from

this land; at least he thought himself well off when he let it to the Apothecaries' Company in 1673 for the term of sixty-one years at £5 per annum. Doubtless they did something for the elevation of the land and its protection from the tides which in the seventeenth century often flowed over the Chelsea meadows; and the apothecaries also appear to have blocked-up a road which once led down to the bank of the Thames. However, the gardens speedily flourished, and the best use was made of the small space, for the whole extent is but three acres. The indefatigable Evelyn went to have a peep at the new affair, and he states, August 7th, 1685, "I went to see Mr. Watts, keeper of the Apothecaries' Garden of simples at Chelsea, where there is a collection of innumerable rarities. Besides many rare annuals, there was the tree bearing Jesuit's Bark which had done such wonders in quartan agues. What was very ingenious was the subterranean heat conveyed by a stove under the conservatory all vaulted with bricks, so as he has the doors and windows open in the hardest frosts, excluding all the snow." Rather injudicious perhaps; and we find in a later account that Mr. Watts was dismissed for having neglected his duties. In 1691 a visitor enlarges on the beauty of the variegated hedges and the assortment of plants displayed in the beds; he was also particularly struck with a bank having "shades of herbs in the Irish style." What this style was it is hard to conjecture. To the careless Watts succeeded Mr. Doody, who was Curator until 1717, when the celebrated Petiver was appointed, a friend of the great Ray and of Sir H. Sloane, who bought his natural history collection. It was in 1714 that Sir Hans, anxious to promote the study of botany, made over the gardens to the apothecaries as their absolute property, on the easy condition that they should deliver to the Royal Society fifty plants of their own rearing yearly until the number reached three thousand. What could the Company do but erect to this benefactor the statue which still graces the grounds, the work of Rysbrach? The inscription tells us it was raised by the apothecaries "with grateful hearts and general consent" to this worthy scientist and lord of Chelsea manor.

To persons passing Chelsea by water the gardens have been for many years principally noticeable for the two conspicuous Cedars of Lebanon, the survivors of four that were planted in the reign of James II. Two died off between 1760 and 1770; the others grew and apparently reached their maximum size about 1830. One of these died some years ago, and the last I believe is now dying or dead. No doubt the collection of hardy exotic trees which began to be formed from the commencement suffered a decline from the increase of the houses since the reign of George III. Of trees in these gardens which had a history there might be specified several, such as a remarkably fine Oriental Plane, two Cork Oaks (*Quercus robur*), a Celtic australis, perhaps of the same age as the one Evelyn saw at Lee Court in 1683 just planted, a Paper Mulberry (*Broussonetia papyrifera*), a Pistachia Terebinthus, an aged Pomegranate, and a large Magnolia grandiflora. These were all extant when Faulkner visited the gardens while preparing his account of Chelsea. The Magnolia, however, was probably not acquired from abroad, but from the west of England. The earliest Magnolias were, it appears, reared at Exeter from a tree which was reared year by year for the purpose of layering, and the plants so raised were for a number of years commonly sold at five guineas each. The able botanist Philip Miller had charge of the gardens nearly fifty years, and his publications show that his knowledge was both theoretical and practical, though we are tempted to smile at the observation that he was with difficulty converted to the Linnæan system by Sir W. Watson and Mr. Hudson, adhering a long while to systems now quite antiquated. Possibly a less degree of force would have led him to embrace the natural system had that been promulgated during his career. Unfortunately, towards the close of his long tenure of office a dispute with reference to the gardens arose between Miller and the Company, and though the breach was bridged over and a retiring allowance given him, he did not survive many months, dying in 1771. Miller effected some improvements in the construction of the greenhouses; but though in communication with botanists of other countries he certainly does not seem to have done much towards the enriching of the establishment with new importations, but then he was possibly prevented from so doing by financial hindrances. This successor, Mr. Forsyth, was fortunate enough to have a sum of money voted to him by Parliament in 1787, in consideration of his "specific compound," by which he professed to restore decayed or injured

trees. This article turned out to be worthless; but the failure did not materially damage Mr. Forsyth's reputation during his lifetime. In the stimulus given to horticulture by the long peace which succeeded to the last French war the Chelsea gardens did not much participate, and though they have been the temporary abiding-place during the last fifty years of several gardeners of repute, they may be supposed now to have ceased to be of importance, especially as botany can be learnt elsewhere more efficiently than under the best "demonstrators" the Company ever had.

The name of John Fraser, nurseryman and tourist of Sloane Square, naturally associates itself with the "Chelsea Physic Garden," for it was through his visits to that establishment that he became inspired with a desire to advance horticulture in England. Born in Scotland, like many other illustrious gardeners, about the year 1750, he came to London while a young man to push his way in the great metropolis. At first he followed the trade of a hosier, married, and settled down in a small shop in Paradise Row, Chelsea, but he soon began to quit the counter as often as he could in order to watch the proceedings of the gardeners close by, and he became intimate with Mr. Forsyth, who had then the charge of the Apothecaries' Garden. Being of an enterprising turn he resolved to go abroad in search of new plants, leaving England in 1783, and from South Carolina and other parts of the United States he sent home consignments of plants to Mr. Frank Thorburn of Old Drompton. Returning in 1785 with the expectation of getting some recompense for his labour and risk, he was told to his astonishment that all the valuable plants he had forwarded were dead, and the survivors, which were common, could not be disposed of. Mr. Fraser was so ill-advised as to enter into an expensive lawsuit about the matter, but he started again for South Carolina in the autumn, and on this visit made the acquaintance of Walter the botanist, bringing back for him his "Flora Carolina," published in 1788. In this journey he obtained also various Pines, Oaks, Magnolias, Azaleas, and Rhododendrons, for which he obtained good prices. Two subsequent trips to America were made in 1790 and 1791, and encouraged by the success of these he determined to have a nursery of his own for the reception of the exotics he obtained. Accordingly he took a plot of ground in proximity to Sloane Square, which is now occupied by the Duke of York's School, some time in 1795, and the next spring he went off again to America. Before the end of the same year he heroically started off for St. Petersburg, and sold a choice collection of plants to the Empress Catherine. A second visit to Russia was accomplished in 1798, Mr. Fraser returning with the title of Botanical Collector to the Emperor Paul.

In 1799 Mr. Fraser with his son John started once more bound for America and the West Indies, but this trip was a perilous one, since between Havana and the United States they were shipwrecked and escaped with difficulty. However, their visit to Cuba brought them into communication with MM. Humboldt and Bonpland, and in 1801 they were back in England with a goodly collection of rarities. To his great disappointment, on his visit to Russia next year Mr. Fraser found that the new Emperor would have nothing to do with him. Undaunted by the first negative, he actually repeated the visit, going both to Moscow and St. Petersburg, but in vain. Again he went to America in 1806 and 1809, and though tolerably successful in his researches there, the nursery at home fell into neglect through his absence, and owing to the vexations he underwent, probably also from the exhaustion consequent upon his frequent and fatiguing journeys, his life was shortened. Though a tolerably robust man, he died in April, 1811, at the age of sixty-one, leaving two sons. It should be added that from Matanzas in Cuba he brought home a Palm with silvered leaves (*Coryphs miraguana*), and a proposal was made to originate a new manufacture by the hand-weaving of hats and bonnets from these leaves. Mrs. C. Fraser, sister to the nurseryman, opened an establishment under the Queen's patronage, but the scheme failed, perhaps through scarcity of material.—C.

We published a very full memoir of Mr. John Fraser in *The Cottage Gardener*, July, 1852.—Eds.]

NOTES AND GLEANINGS.

The following candidates were duly elected Fellows of the ROYAL HORTICULTURAL SOCIETY on Wednesday last—viz., G. F. Barrell, Col. Barron, Dr. Lionel Beale, Mrs. A. G. Dallas, Warren de la Rue, F.R.S., Mrs. de la Rue, Mrs. E. de la Rue,

Mrs. Frederick Francis, Hon. Mrs. Murray Gladstone, James Grievie, Lady Cornelia Guest, J. Clarke Hawkehaw, John H. Ley, Mrs. Midlane, E. H. Pember, Q.C., James M. Polak, John M. Polak, Mrs. A. G. Pollock, Henry Pott, Col. R. A. Roberts, R.E., and Mrs. Woodbine. Also the following as guinea members:—Rev. George Brewin, H. J. Buchan, Rev. H. Cheales, Rev. N. W. Gibson, John F. Gabriel, Judah Nahon, Miss A. L. Robertson, Edgell Westmacott, R. Gilbert, W. Holland, E. Stevenson, J. G. Kemp, Jas. Tweedie, and Mrs. Nash. The Cirencester and Llanely Societies were admitted into union.

— D. Deal states, that if a "WOULD-BE EXHIBITOR" will send his address, a schedule of the NATIONAL ROSE SHOW shall be forwarded to him, from which he will see that not only are classes provided such as he wishes, for twelve and six Roses, single trusses, but that there is a rule that no large exhibitor shall show in the small classes, thereby giving the small grower a fair chance of winning a prize.

— We are informed by Mr. Charles Parker, the Hon. Secretary, that owing to unforeseen circumstances and the inadequate support accorded to the WISBECH ROSE SHOW and Horticultural Exhibition, the Show fixed for the 25th of June will not be held.

— The next exhibition of the NATIONAL AGRICULTURAL SOCIETY will be held in connection with the Botanical Society's Show in the Town Hall, King Street, Manchester, on Friday, April the 27th, 1877. Liberal prizes are offered for pans of six and four dissimilar varieties. There are also numerous prizes for green edges, grey edges, white edges, and selfs; also special prizes for the best Lancashire Hero, the best green and the best grey; for Alpines with yellow centres, for Alpines with white centres, and for Polyanthuses in pairs and single plants. All plants in the pans to have not less than five expanded pipe, those in the classes not less than three; the trusses to be shown free from all artificial packing and support. Intending exhibitors are requested to apply to the Hon. Secretary, Rev. F. D. Horner, Kirby Malzeard, Ripon, not later than April 21st for exhibition labels, stating the probable number required.

— The following were among the distinguished personages who visited the ROYAL HORTICULTURAL SOCIETY'S SHOW on the 21st inst.—Marquis and Marchioness of BOWMONT, Lord and Lady Alfred Churchill and Miss Churchill, Ladies Blanche and Constance Conynghan, Lady Chesterfield, Lady Dorothy Nevill, Julia Countess of Jersey and Mr. Brandling, Marchioness of Londonderry and Lady Edwards, Sir Trevor Lawrence, Bart., M.P., Col. Hon. Strange Jocelyn and Miss Jocelyn.

— We have received from B. R. Cant of Colchester some excellent specimens of the fruit of what is now known as the D'ARCY SPICE APPLE, a variety which on account of its late-keeping and delicious flavour ought to find a place in every garden however small. It is also known by the names of Baddow Pippin, Spring Ribston, and Essex Spice. The tree is a good bearer, inasmuch as being late in blossoming it frequently escapes the frosts of spring which are often so disastrous to many other varieties. The D'Arcy Spice Apple originated at Tolshunt Darcy, in Essex, and is gradually finding its way into general cultivation.

— The last meeting this season of the WIMLEEDON HOUSE GARDENERS' SOCIETY was held in the young men's rooms on Monday night. These meetings are held at fortnightly intervals during the winter months. They are supported wholly by Sir Henry Peek, Bart., M.P., who provides a substantial meal on each meeting night for twenty-four gardeners of the district. After the report a paper is read, and discussion thereon follows, and many useful hints are thus elicited, and good gardening is directly encouraged. Sir Henry takes great interest in the gatherings and the subjects which are discussed, his object being the laudable one of enabling the gardeners of the district to render themselves more proficient in their calling, and at the same time to afford them a means of joining together for wholesome relaxation. The paper read on Monday night was an able essay on Vine culture and management by Mr. Ollerhead; and the improved state of the Vines under his charge is sufficient evidence of the soundness of the practice that was embodied in his lecture. At the close of the meeting an unanimous vote of thanks to Sir Henry Peek for his kindness was recorded on the minutes, and Mr. Ollerhead was similarly thanked for the satisfactory manner in which he had carried out the wishes of his employer in rendering the gatherings successful. This private organisation is distinct from the Village Gardeners' Improvement Society.

— THE INTERNATIONAL POTATO SHOW will be held at the Royal Aquarium, Westminster, on the 3rd, 4th, and 5th of October next, and not, as originally intended, at South Kensington. The prizes offered amount to upwards of £100. The Secretary is Mr. J. McKenzie, 1 and 2, Great Winchester Street Buildings, E.C.

— ONE of the best modes of PROTECTING the BLOSSOMS of PYRAMID PEAR TREES that has come under our notice is adopted by Mr. Ollerhead in the gardens at Wimbleton House. The trees, handsome specimens 10 to 12 feet in height, are laden with blossom, which appears to be efficiently sheltered from frost. Between each tree a pole has been fixed in the ground and made firm by braces of wire, after the manner of securing telegraph poles; and along the top of the poles a batten—ridge piece—is nailed. Long lightly made garden mats are then sewed together, forming a covering of any length desired and 7 or 8 feet in depth. The top side of the covering is secured to the ridge piece; the lower side, which is 3 or 4 feet from the ground, having attached to it at suitable intervals stout cords, which are drawn tight and secured to pegs which are driven in the ground at some distance from the trees—sufficient to prevent the covering touching the branches; the plan adopted being precisely that of fixing a tent or marquee. The trees, in fact, are "in camp." During favourable weather one side of the trees is exposed to the sun as required by raising the covering. Each tree appears to be capable of bearing a bushel of fruit, which Mr. Ollerhead justly considers will be of ten times the value of the mats, which will be serviceable for three or four years. The work of covering is neatly done, the trees being in long rows, and the tents have a somewhat novel yet comfortable appearance.

— PLANTS of a very chaste and valuable Orchid—ANGRECCUM CITRATUM, are now flowering in the collections of Lord Londesborough and the Messrs. Veitch & Sons. The plants are growing in baskets, each plant having two pendulous flower stems containing two rows of small creamy pink glossy flowers, somewhat after the form of the flowers of *Lobelia ramosa*. For wreaths it is impossible to imagine anything more charming than this lovely Orchid; the wreaths would, however, be rather costly, the plants though small being worth about forty guineas each.

— SPECIAL methods of propagation for particular plants are always of interest and often of practical value. It is well known that cuttings from large plants of *JACARANDA FLICIFOLIA* will not strike, and as small plants run out of stock or grow too large it frequently happens that others have to be bought at a high figure. The method found to succeed at Kew for propagation from large plants has not, so far as we are aware, been hitherto tried elsewhere. It consists in cutting-back the plant when too tall, and laying the old stems their full length on a moist warm bed of cocoa-nut fibre. Here the buds break and grow entirely from the strength in the old wood, and when large enough may be taken off and struck in the usual way without difficulty. It must be observed that the stems are laid down their full length, and not cut up as is usual with *DRACENA*. We may mention as a recent observation that the leaves of *Aphelandra fascinator* readily produce plants, the buds growing from the base of the petiole. This plant, however, is easily struck from cuttings. It may not be known to all cultivators that the leaves of *Bertolonia Van Houttei* will produce plants just in the same way as a large-folaged *Begonia*. Nothing is more gorgeous in the way of leaf-colouring than a pan of these *Bertolonia* in a healthy state of growth, as they always may be when young without any difficulty. While on the subject of leaf-propagation it may be well to mention *Drimopis Kirki*, a new Liliaceous bulb. If a leaf be broken off and thrown down it proceeds at once to form few or sometimes many bulbets on the broken edge. Instances of this are not common. *Lachenalia* are said to act in a similar manner, but certainly not with the same freedom.

— It may be encouraging to gardeners in comparatively small places to know that Mr. MOORMAN, who exhibited so successfully at Regent's Park last week, has not the charge of a large garden and unlimited resources; he simply makes the best of a small place. The Misses Christy's residence at Coombe Bank is pleasantly situated, and the two or three acres of pleasure grounds have been tastefully laid out, principally by the present gardener, and contain many handsome specimens of Hollies and other shrubs. The soil is naturally a poor gravel, yet cut Roses have been successfully exhibited from this garden, where a miniature roseroy has been arranged.

Roses are also cultivated in pots in a manner which has not been surpassed by any amateur cultivator; the plants are grown in brick pits—old Cucumber and Melon pits—and frames. Until recently the garden contained only one house—a stove, but a large span-roofed house 65 feet in length by 20 in width has just been erected—a valuable addition. A case in this house contains one of the finest specimens of the Killarney Fern, *Trichomanes radicans*, which we have seen. The plant, which is 4 to 5 feet in diameter, is growing healthily in a shallow oak tub. It was brought from Killarney in 1840 by a member of the Christy family, and is deservedly valued. It is pleasing to record that the able and intelligent gardener at Coombe Bank has kind employers, whose interests he studies, and enjoys in return a comfortable home. A gardener so thoroughly earnest in his business as Mr. Moorman deserves success.

— THE ALBERT MEMORIAL.—The plans prepared by Mr. Wills of South Kensington, assisted by Mr. Alfred Bedborough, architect, of Westminster, for covering the late Prince Consort's national memorial in Kensington Gardens with glass, and for forming in connection with it a series of gardens in which to represent the vegetation of each quarter of the globe, have been submitted to the Queen and to the Prince of Wales, who signified his approval of the scheme, and expressed a wish that the undertaking might be carried out. The proposed structure covering the memorial is designed for execution in iron, copper, and glass. It is octagonal in shape, and 200 feet in diameter, with projections on four alternate faces of the octagon. The width of the central part supporting the dome is 130 feet, and the height from the ground to the springing of the dome 145 feet. The extreme height from the ground to the top of the figure surmounting the lantern on the dome is 340 feet. The principal entrance, which is 25 feet wide, is from Kensington Gore. The gable is filled with elaborate Gothic tracery, and other principal faces of the octagon are similarly treated. East and west of the central structure, and connected therewith by corridors, it is proposed to have the gardens representing the vegetable kingdom of the four quarters of the globe.

— We have before directed attention to the remarkable odour of *BORONIA MEGASTOMA*. One plant will "scent" a large house after the manner of wild Primroses. A few larger plants will fill the air with fragrance even beyond the house. Of this we had ample proof the other day in Lord Lonsborough's garden, where at some distance from the house containing the plants their perfume was perceptible. Sprays of this *Boronia* continue well in a cut state and retain their fragrance; a branchlet which was cut by us ten days ago is still as fresh as ever. This plant is attractive and of easy culture, and we are not surprised to hear that the demand for it is very great at the nurseries.

— THE renowned collection of exhibition stove and GREENHOUSE PLANTS of the late F. G. Wilkins, Esq., Leyton, were sold at Leyton on Thursday last by Mr. Stevens. The company was tolerably numerous, but the bidding was not spirited, and the total amount derived for the plants (197 lots) fell considerably short of £500. The only "long" prices secured were for two *Anthuriums*—A. Schertzerianum Wardii being probably the finest variety in existence. For this medium-sized plant the competition lay between Messrs. Shuttleworth, Pilgrim, and Wheeler, the plant being knocked down to the last-named bidder for Messrs. James Veitch & Sons, Chelsea, at the price of eighty guineas. The other large *Anthurium*, a splendid plant in a 25-inch pot, was secured by Mr. Walker, a Scotch gentleman, for twenty-one guineas; this gentleman also purchased nearly all the specimen *Pelargoniums* at prices ranging from 10s. to £2 15s. The large plant of *Erica Cavendishiana*, 5 feet by 4 feet 6 inches, was sold for £6 10s. to Mr. F. J. Williams, Leicesterhire, who was the purchaser of many other specimens. Messrs. B. S. Williams, Turner, Jackson, Shuttleworth, Pilgrim, Davis, Ward, and Donald were the other principal purchasers, and secured in most instances cheap bargains. The short time stipulated for removing the plants—Friday at six o'clock, was a disadvantage to the vendor. The exhibition vans (Mr. Ward's) were sold on the high road immediately in the front of the residence for £81.

— A MOVEMENT is projected to provide an exhibition at South Kensington somewhat different in its character from the ordinary shows—namely, an exhibition of COVENT GARDEN MARKET PRODUCE—flowers, fruit, and vegetables. The representatives of commercial horticulture have many of them

already expressed their readiness to have a grand field-day at South Kensington. This excellent idea is now being worked, and if it is carried out in its integrity, and at a convenient time for exhibitors and visitors, one of the most attractive and instructive displays may be produced that has been placed before the public. Than the growers of what is sold in Covent Garden none have done more to promote horticulture in its most useful aspects, and none are more worthy of encouragement. An exhibition such as is now suggested cannot fail to possess special features of attraction, and to be worthy of inspection by all who are identified with house, table, and conservatory decoration.

— We have received from Mr. Lee of Clevedon blooms and leaves of his new VIOLET, "Odonatissima." The flowers are large and pleasing in colour—pale blue. The foliage is distinct, being much rounded, leathery, and corrugated; but the principal charm of the Violet is its powerful perfume. It is rightly named, for it is certainly the "most sweet" of all Violets which have come under our notice.

— CAMELLIAS AND VIOLETS.—We have received some very superior *CAMELLIAS* grown out of doors, and Neapolitan Violets from frames, sent by Mr. Froud, gardener at Hawley Place, Dartford.

— THE *New York Tribune* publishes what a Crocus when first opening might say:—

"If there ain't Snowdrop,
Seems to me
She'd better stay where
She ought to be.
"Wonder what brought her
Out so soon,
S'pose she thought 'twas
Afternoon.
"She'll get her nose nipped;
Serve her right!
Small children like her
Must keep out of sight.
"Wind needn't blow so!
Makes such a din.
Good gracious! Guess I'd
Better go in.
"Where's my blanket gone?
Cold hurts so!
Poor little Crocus is
Freezin' up—oh!"

DIURNAL OPENING OF FLOWERS.

MR. THOMAS MEEHAN, at a meeting of the Philadelphia Academy of Sciences, referred to observations he had made this season on the diurnal and nocturnal expansion of flowers, and said that, contrary to the popular impression, it is not probable that light or its absence alone determined the opening of the blossoms. There were some plants, as, for instance, *C. noteras biennis*, the Evening Primrose; *Anagallis arvensis*, the Pimpernel, and others, which remained open or otherwise longer when the weather was humid or cloudy, and were looked on in consequence as kinds of floral barometers; but from other facts it was clear that it was not the weather merely, but some other incident accompanying the weather that governed the case.

For instance, though *C. noteras biennis* and other *C. noteras* opened at evening, and, if the atmosphere be moist, continue open the greater part of next day, many species opened only in the daytime; and this they did regularly, quite regardless of meteorological conditions. *C. serrata* of Colorado was one of these. It was regular in opening about noon; the blossoms were all closed long before sunset.

In other allied families we saw similar divergence. In the Cactus family, *Opuntia* and *Mammillaria* opened only about midday, while most of the *Cereus* opened at night. The night-blooming Cactus was a familiar example. But the chief interest was in the fact that many had their special hours of day or night for the expansion. The *Portulaca oleracea*, common Purslane, opened about 8 A.M., and by nine had performed all its functions; while a closely allied plant, the *Tillium tetrifolium*, from the serpentine rocks of Chester County, opened at 1 P.M., and was closed by three. The conditions of the weather did not seem to influence them.

There was the same attention to daily periods in the growth of the parts of plants as well as in the expansion of the petals. In composite plants the floral growth was generally in the morning, and was usually all over by 9 or 10 o'clock A.M. The elongation and expansion of the corolla was usually completed in an hour after sunrise, but the stamens grew for an hour more, and the pistil continued for still another. There was

little if any growth in the floral parts after nine o'clock in a very large proportion of this order of plants.

In Grasses, Cyperaceae, and some Rushes also, the floral parts were very exact in their time of opening. In the Plantains (Plantago) the pistils appeared a day or more in advance of the stamens; and these last appeared at about a regular time in each day. In *Luzula campestris*, the Wood Rush, he had by a series of observations timed it exactly. Before nine the anthers were perfect, but by ten the pollen has been all committed to the winds, and only dried membranous matter remained. So far as he could ascertain, meteorological conditions did not influence the time in the least in this case.

The popular impression of light and moisture as agents in this behaviour had seemed to receive a tacit scientific assent. It was clear, he thought, there was a more powerful agency underlying these; and it was, perhaps, a gain to science to be able to see this, though in so dim a light.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

All the operations in this department have been well brought forward, and we have little else to do but wait anxiously until the blossoms open, and to hope that they will escape the spring frosts. At present fruit prospects do not look very promising. On the morning of last Thursday Fahrenheit's thermometer registered 8° of frost, on the previous morning 6°, and we are generally warmer here than at many places in the neighbourhood of London.

We tried covering the pyramid trees with frigi domo when they were much smaller than they are now by erecting a framework over them, but it was not a successful experiment; the framework was so high that it required steps and two men to remove the covering—troublesome work, which occupied much time. We tried leaving the covering on night and day in frosty weather, but this was a failure; and in all cases, either on walls or on the open borders, if we could not remove the coverings when they were not required as protectors from frost we would not cover at all. All our trees on the open borders are left to chance, but choice wall trees should certainly be protected, which can be done easily and with but little expense. In previous seasons we have fully detailed the way to do this—that is, by fixing stout poles against the wall in a leaning position, and nailing one side of the covering under the coping of the wall and the other near the bottom of the poles. If the covering reaches within a foot or two of the ground it will be enough to protect the open blossoms. As a general rule the proper time to put down the covering is a little before sunset, and between nine and ten in the morning will usually be the best time to roll it up. A man can go round a large extent of wall in a few minutes by beginning at one end and rolling it up to the top of the wall, where it is fastened with a string at the top of each pole; of course, if cords and pulleys are fixed in position the work can be done more readily, but it is not necessary to go to this expense. We shall see that the Strawberry beds are perfectly free from weeds before they make much growth, and all other borders will be hoed very soon to check the growth of weeds.

PINE HOUSES.

Here nothing has been done except to see that the fruiting plants are in a suitable temperature—about 70°, or less by 5° if the weather is cold; but in bright sunshine the temperature will run up to 85° or 90° with advantage, and when the house is closed in the afternoon about three o'clock the surface of the bed, paths, and walls should be sprinkled with water; the evaporating troughs should also be kept supplied with water. Instructions as to cultural treatment were given in a previous number. Succession plants will now be making free growth, and they ought not to be checked in their development. Any check, such as want of water at the roots or not being potted before the roots become matted to the sides of the pot, will often cause the plants to throw up fruit prematurely. If stove plants have to be placed in the houses, as is too often the case, see that no insect pests, such as white scale and mealy bug, are allowed to remain on any plants, as they would very quickly spread from the plants to the Pines, and would utterly ruin them. Just a word on repotting. The best time to do this is when the beds are renewed with fresh tan, when the increased heat in the bed causes the promotion of fresh roots, whereas if the pots in which the plants have become established are plunged in a new bed the heat may cause them to become injured. The compost ought not to be very rich. Good turfy loam, with about one-sixth part of decayed stable manure and a few crushed bones added, is as good as anything in which to pot the plants.

PLANT STOVE AND ORCHID HOUSES.

Cuttings of any softwooded plants which were put in early in the year must be potted as they require it, and they are much

benefited by a little bottom heat, especially after being rooted. It will be well to carefully watch the development of the leaves, and destroy any bug or scale that may appear before they have time to increase. To grow softwooded plants well they should be placed in a suitable temperature near the glass and not over-shaded with plants of larger growth. This is a matter of some importance in plant culture, and it must not be lost sight of. It would be much better that they did not have any bottom heat rather than that they should suffer for want of light and air.

Many of our most showy stove plants ought to be propagated annually and the old plants be thrown away. One of these is *Torenia asiatica*, a Scrophulariaceae plant of trailing habit, well adapted either for pot culture or for baskets. It will do in loam, but the leaves are of a much darker green if the compost is composed of peat and leaf soil. It flowers most profusely in a young state. *Pentas carnea* and *P. rosea* are easily managed, and soon grow into handsome plants which flower profusely all through the winter months. *Hoya bella* is a lovely plant which may be propagated now and grown-on into flowering plants by the autumn. The flowers are borne at the axils of the leaves in umbels of from six to twelve according to the strength of the plants. It may also be grown into large-sized specimens, and well repays all the care bestowed upon it. *Euphorbia jacquiniiflora* ought always to be freely propagated for winter flowering; its brilliant scarlet flowers are well adapted for bouquets, and the supply may be kept up all through the winter months. The plants thrive in sandy peat and turfy loam in equal proportions. *Contradenia floribunda* is an old plant seldom grown, but it is of the easiest culture, and is also to be recommended for the long period during which it continues in flower—nearly all the winter and spring months. Cuttings strike very freely and will produce attractive flowering specimens if grown-on during the summer months.

Of *Begonias* many species and varieties are well adapted for winter flowering. Some of the most showy are the Chelsea hybrids; many of them continue in bloom all through the winter months. *B. Cheloni* is a most useful free-growing variety of the *B. Bolivienensis* type. The old *B. fuchsoides* should be grown in quantity where profusion of bloom is required for decorative purposes; also *B. nitida* with white flowers, and equal proportions. *B. Peacock* and *B. Weltoniensis* are both distinct plants and among the most charming of the species, and should not be overlooked. All the above are decorative plants of a high order and are easily cultivated. Where many flowers are required for cutting or room decoration *Begonias* are well adapted for this purpose.

Orchids require careful attention as they are now starting into growth, and when the growth is in course of formation any check is very injurious. Water in the form of atmospheric moisture and also applied to the roots must be steadily persevered in until the growth is complete. After that comes a period of rest, when water must to a certain extent be withheld. It is not possible to have a general potting time for *Orchids*, but the best time seems to be when the new roots begin growing from the base of the preceding growth. Many species succeed only on blocks, and these require water at least every day in fine weather, as nearly all their support is derived either from atmospheric moisture or from water applied to the roots, and during hot weather this speedily evaporates.

FLOWER GARDEN.

Bedding plants are now very much in the way, as all the vineries are started and pits and other houses are not sufficient to contain the plants. We have removed all the more hardy into a turf pit and cover at night with a frigi domo screen; these have been sufficient to keep out 8° or 10° of frost. Zonal *Pelargoniums*, *Antirrhums*, *Lobelias*, &c., have been placed in the pit. *Calceolarias* do best when planted out in a bed dug out as if to plant *Celery*. The plants are set out in fine soil, and a covering is stretched over on the top of the ridges to protect from frost. Cuttings of all plants inserted early in the season are carefully managed. They are gradually removed from the house where they were struck to one a little cooler; after a while they are potted off or the plants are transferred to boxes, and when well established they are placed either in a cold pit or frames preparatory to being moved out of doors. Stunted plants never do well, and they will spoil the whole effect of the flower garden.

FLORIST FLOWERS.

Although Tulips started quickly into growth and made good progress early in the year, they have lately had a rough time of it; the leaves have been frozen when in a wet state again and slain, and many of them show the effects of it. Those who have canvas coverings to place over their plants can keep the rain from the centres of them, and also ward off the ill effects of severe frost. See that the surface of the beds is stirred when required and all weeds removed.

Auriculas have not grown fast lately, and if the weather does not change what was once thought would be an exceptionally early season for these flowers may yet be a late one. We have

some trusses quite expanded, and when the flowers open so early as this they last in beauty much longer than those which open about the middle of April. Most of the plants are now showing their trusses, and the young leaves in their variety and newly-developed beauty are very interesting. The fancier is now entering into his period of keenest enjoyment, and much attention is necessary to preserve the plants from frost at night and east winds by day.

Carnations and Pinks recently potted are looking very well, and require no attention except to water them when necessary. The pots have been placed under glass to protect the plants from cold rains and frosts; the lights are removed on every favourable opportunity. We fumigate to destroy green fly on its first appearance. We ran the Dutch hoe through the beds of Pinks and Pansies principally to dry the surface of the ground. Cuttings from Dahlias which have been placed in heat to start into growth will now strike readily in a little bottom heat.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Daniels Brothers, The Nurseries, Norwich.—*List of New Roses for 1877.*

A. Godfrey-Leubeuf, 26, Route de Sannois, Argenteuil (Seine et Oise), France.—*General Catalogue of Asparagus, Strawberries, Vines, and Fruit Trees.*

Rawlings Brothers, Old-church, Romford, Essex.—*Descriptive Catalogue of Dahlias.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

COMMUNICATIONS.—Many are delayed from publication by want of space.

BOOKS (*Constant Reader*).—Write to Mr. E. S. Williams, Victoria and Paradise Nurseries, Holloway, London, N., who will give you the information required.

AZALEAS UNHEALTHY (*P. Ryce*).—You had better repot the plants at once in the best peat you can procure and a little decayed leaf soil and silver sand. The shift should not be large, yet large enough for the potting to be efficiently done. Drain the pots well and pot firmly, being especially careful that the balls are in the right condition as to moisture—neither wet nor dry, at the time of potting. After the plants are potted place them in brick heat, syringing them twice daily, and providing a moist atmosphere. Water them carefully at the roots.

TAN AS MANURE (*Herefordshire*).—It would only be beneficial to Potatoes, Carrots, and Radishes on heavy soils.

HUMEA ELEGANS (*J. H. P.*).—The leaf enclosed indicates that the plant is deficient in root-action. Probably it was pot-bound and then shifted into a larger pot. Give free ventilation and keep the air cool and moderately moist.

FOLIANTHUSES.—E. M. P. wishes to know where he can obtain *Cheeshire Favourite*, Lord Lincoln, Kingfisher, and George IV.

THREE CARNATIONS (*G. Walsh*).—You can procure them from any florist who advertises in our columns.

EGGS FROM THE CAPE (*G. M.*).—Cover the bulbs with soil for the present. We will give fuller information in a future number.

PRUNING ROSES (*E. M. W.*).—Roses to bloom in August should not be pruned until the second or third week in May, allowing the plants to push shoots at the extremity of the last year's growth, and at the time named cutting back to the dormant eye at the base of the shoots.

ROSES AND ONIONS (*M. Chaplin*).—We never said they are of the same order. If planted among Roses the Onion is said to intensify the odour of the flowers. The plan of the old garden is in No. 712.

GERANIUMS SPOTTED (*C. N. Briggs*).—The spot is in most instances the result of a stagnant atmosphere and deficient root action, and the affected plants frequently improve as the season advances. If they are much spotted the best remedy is to cut them down now, severing the shoots below the disease line, and when new growths have pushed half an inch in length shake the plants out of the pots and repot in fresh sandy loam, and the after-growth will be healthy.

CULTURE OF FICUS, GERANIUMS, AND FERNS (*An Irish Subscriber*).—The *Fuchsia* and *Geraniums* having been cut down should, when they have made shoots an inch long, be turned out of the pots and have all the old soil removed, or so much of it as can be done without injury to the roots, returning them to the same or slightly larger pots. They should after potting be placed in a house with a temperature of from 55° by night, and 60° to 75° by day, with shade from sun until the potting is recovered from, the house being kept rather close and moist. The plants should be carefully watered until the roots are working freely in the fresh soil. Air to be admitted moderately, and the plants sprinkled overhead morning and evening. When the shoots have grown 3 inches long they may be stopped as required. After the pots become filled with roots weak liquid manure at every alternate watering will be beneficial. The plants should as the weather becomes

warmer have increased ventilation, being well hardened-off by the time of exhibition. The Ferns ought to be repotted and grown-on in a moist atmosphere, and may be given a slightly increased temperature to forward them, but avoid drawing them up weakly. With a moist atmosphere and shade from sun they will make good growth by the time you name.

ECHECARRA (*Old Reader*).—Pot the plants now and place in a bottom heat of 75° to 85°, and a top heat of 60° to 65° at night, 70° to 75° by day, rising to 85° or 90° with sun and air, maintaining a moist atmosphere and watering copiously. They should have a position as near the glass as possible. A compost of turfy loam with a fourth of leaf soil or well-decayed manure and a free admixture of sand is suitable, with good drainage. When the plants have made good growth, say in July, keep them rather dry for a month or six weeks, then when about watered reduce the water very gradually, so that after that it may be rested a short time and started again. They will flower without bottom heat, but do very much better with it.

REPORTING AZALEAS BEFORE FLOWERING (*Idem*).—The plants you have potted will not cast their buds, but will be longer in expanding than had they not been potted, and will perhaps start in coming rather before the flowers appear. The plants ought not to be watered until they have started flowering. We should not pot the young plants until they have ceased flowering.

MUSHROOMS FAILING (*A Constant Reader*).—Having no security of "buttons" appearing, which come to nothing, we can only conclude that they are destroyed by too heavy or too frequent waterings. Why use hay or straw for covering the beds? There must be something radically wrong with the compost, or else there may be a new way for the Mushrooms to grow up with "nothing but stems." We do not employ any covering for the beds, but have shutters to the windows to exclude light, and we syringe the walls and floors every morning. We look over the beds daily to see that they are uniformly moist, any dry places being syringed with water rather before the plants appear. The plants ought not to be placed so near the heating apparatus water will seldom be required beyond a slight sprinkling occasionally.

MANŒCULA NIEL ROSE (*J. W. B.*).—The stalk is shanked, and that arises from the sap not being sufficient in quantity to sustain the growth of the large quantity of leaves. Thin the flowers, and apply weak tepid manure water to the roots.

QUANTITY OF DONES FOR VINE BORDERS (*W. Hartley*).—For a border 30 feet by 12 feet, and a yard deep, it would take 4 cwt. of crushed bones, Charcoal is not absolutely necessary, but about five bushels added to the compost would be of some advantage.

GUM ON CAMELLIAS (*J. H.*).—The moist gummy patches on the surfaces of your *Camellia* leaves is extravasated sap. The exudation may arise from two causes—plethora or excessive vigour; or weakness and a morbid state of the sap, resulting in what is erroneously known as "honeydew." Judging from the leaves sent, and from your letter, we are of opinion that the evil of which you complain is due to the last-named cause. The remedy is, after syringing the leaves, to apply water more copiously, and promote the fluidity of the sap; also to increase the vigour of your plants by giving clear weak liquid manure occasionally—made from soup or cowdung, or the two combined. The "mould" which forms on the leaves is a fungus, a result, not the cause of the excretion. If the leaves sent are a fair sample of those on the plants we are satisfied that the plants are insufficiently supported, and that that is the real cause of the excretion.

APRIS ON WEEPING BIRCH (*A Constant Reader*).—Keep a good look-out for the aphids on the leaves during the close of May or early June, and syringe the trees with a solution of soft soap, 2 ozs. to every gallon of tobacco juice diluted with six gallons of soft water, which will give you seven gallons, requiring 14 ozs. of soft soap. Strain and apply with a garden engine or water can. It may be necessary to repeat the application, and in case of a bad attack to add to every three gallons a wine-glassful of spirits of turpentine, mixing it thoroughly with the solution before application.

DESTROYING WOOLBEE (*C. A. B.*).—Woolds are usefully employed in convenient places in the destruction of woodlice. If you have an aversion to loads you can lay traps for the woodlice, such as sliced potatoes spread in a sealing the roots of plants.

WIREWORMS IN VINE BORDERS (*J. H. C.*).—As you say they swarm under the boards that lie on the borders, it will be a good plan to turn up the boards occasionally and destroy all that can be seen. Rape-cake, Potatoes, and Carrots attract them, and they can be destroyed when feeding. Have you noticed that they have eaten the Vine roots? Because, although wireworms may sometimes attack the roots of Vines, they do not often do so. We saw at Mr. Pearson's nursery at Chilwell, Nottingham, a pot Vine amongst many others. It was one of the strongest and healthiest in the house, and yet was half a hundred wireworms gnawing at the roots. We were writing every day, and we noticed that they were not so that the worms ate up of the roots.

NAME OF TULIP (*A. M.*).—We think the early rose-and-white Tulip you describe is Cottage Maid.

NAMES OF PLANTS (*L. S. M.*).—*Adiantum lunulatum*. (*Reader of the Journal*).—1, *Elaeagnus occidentalis*; 2, *Adiantum tetraphyllum*; 3, *A. tenerum*; 4, *A. ophiopogon*, or near it; 5, *A. affine*; 6, *Salicigna Martensii*.

POULTRY, BEE, AND PIGEON CHRONICLE.

TRIMMING.

"How about trimming in our new club?" "It hardly needs to be commented on," we replied; "of course the club will be down upon every case that comes under its notice." Then I for one cannot join, much as I should like to do so, in the "new club." This comes from a Polish brooder, or much fancier, one who in every affair of life makes his heart as he does all Nature's objects, and who loves poultry from his heart as much as I do. He is a member of the London does in the Academy, parks, and Opera House all put together. He is one of those fanciers who are always ready to do a brother fancier some good turn, even if it may injure his own prospects at a show; and he is one whom the club would

do well to keep in sight, and yet he will not join a club because he knows that his peculiar fancy cannot and does not win prizes without trimming. White-crested Black Poland's they are, and certainly it does seem to us almost amazing that a judge should give a prize to a bird of this breed which he knows must have had manipulation in its crest, and utterly decline to look at a plucked Brahma or a scissored Hamburg. We ask again, as owners to the faces of Game and Spanish? Why should trimming be allowed with the faces of Game and Spanish? Why should the removal of black feathers in a White-crested Poland's crest be winked at, and a bird with plucked hocks or improved tail be disqualified? Some may answer, "A Spanish hen is nothing unless clean in her face." Perfectly right, but a Cochin with hocks is one of the ugliest fowls we have, while one with soft curling feathers round the joint makes one of the most beautiful birds we have among our pets.

We believe it is now generally understood that a red feather in the hackle of a White Cochin or a White Dorking, or a black feather on the back of a Buff Cochin and such like, may be abstracted without ever infringing on what is wrong or unlawful; but those who only trim in that mild way may as safely leave the bird alone, for we do not believe any judge of experience would pass over a bird perfect in all other points because he or she had but one or two wrong feathers somewhere about their body. In fact we need to continually see the White Cochins of a noted breeder, who has now retired, winning over and over again, which had an orange-colored feather or two in the neck and saddle hackles, and which the owner refused to remove. When, however, it comes to pulling the flights of a Buff Cochin cock, or of systematically plucking the crests of Black Poland's, the matter assumes quite a different aspect.

We are glad to hear that the club is really in course of construction, and that those on the preliminary committee are sound fanciers; and much as we long to see this club established, we feel the various stages permissible in trimming and beautifying certain breeds will be a difficulty to members. They will have to strike out some line and keep to it. It will have to be decided how much or how little in the case of Spanish, Game, Poland's, &c., is allowable and what steps will be taken if these limits are passed over, as until this is done many fanciers will, we are sure, shrink from belonging. We strongly hope the present judges will join this club, for they will be able to help in this matter of trimming more than any others almost: still, if they refuse to join the ranks, we hope the club will be so strong and so large that it will, by embracing most committees and secretaries of shows, be able to appoint its own judges and ignore those who set their backs up against the improvement in poultry matters which so many are impatient for.

Judges have much power in their hands, and they should use it to the best of their discretion; and though there may not be so very many good all-round judges, still there are plenty of gentlemen who could well undertake particular sections of exhibitions; and this is a system which we hope to see the club bringing into existence, for then, by clearly defined rules and limits, such members will have it in their own hands as to how far they will countenance trimming in its various branches. We despair of it being done in any other way, but do believe that if once the club can be made strong enough by the number of its members to say how much a judge shall be responsible for to the club in the awards which he may make at exhibitions, that then, and not till then, shall we find a genuine reform. We cannot express ourselves too strongly on one point, and that is that the success of the club will depend upon its strength. We want all to join who are willing to abide by the defined rules, for then only will the fancy be able to lay down its laws, its opinions of right and wrong, and its ideas of the awards of particular judges.—W.

BENTLEY PIGEON SHOW.

THE above Show was held in the large room, Cross Keys Hotel, March 20th and 21st, 1877, and was a complete success. The awards were as follows:—

PIGEONS.—CARRIERS, POSTERS, AND TOMBLERS.—Cock or Hen.—1 and Cap. J. Chandler, 2, W. Nottage, 3, and the, F. G. Key, Extra 3.—W. Watkin, HARRIS, JACOBIUS, TERBANS, and OWLS.—Cock or Hen.—1 and Extra 3, E. G. Key, 2, J. Chandler, 3, T. Chubb, 4, the, G. Haworth, 5, Chandler, 6. **ANY OTHER VARIETY.—Cock or Hen.**—1, E. G. Key, 2 and 3, J. Chandler, the, Corbett & Leeson. **SELVINO CLAS.**—Price not fixed. **Cock or Hen.**—1, J. Chandler, 2, W. Nottage, 3, T. Chubb, 4, the, 5, J. Chandler, 6. **Cock or Hen.**—1, E. G. Key, 2, T. Wheeler, 3, J. Chandler, W. Nottage, the, W. Nottage.

JUDGE.—Mr. J. Baker, London.

HIVES.

I WOULD cheerfully have accepted Mr. Pettigrew's challenge to pit the Stewarton hive and system against his large straw skeps for honey results, quantity as well as quality, were it not that such test has been carefully carried out in my own apiary long since with all sorts of straw hives, large as well as small, dome, flat, and slope-topped, cemented, painted, &c., with so

much gain in favour of Stewartons as honey reaping machines as to sink the straw skeps to their present subsidiary place as mere domiciles for wintering bees to feed the Stewartons. Had your correspondent had similar experience he would have been more chary of his challenge. Further: Mr. Pettigrew when he penned the sentence—"that the hives be placed side by side in the beginning of next year and remain untouched by their owners to the end of the season," ought to have known that such a proposition entirely nullified what went before. In the Stewarton, neither its dimensions nor contents being fixed, must of necessity be frequently touched and handled. I do trust the bee science of the age has not so retrograded as to adopt the primeval let-them-alone or happy-go-lucky policy going in for the one-chamber apartment of the big straw or old tea chest.

As was to be expected, so thoroughly advanced an apirarian as Mr. John Hunter gives in his adhesion to "mobility" over "fixism," and I quite agree with what he has so well said as to the absurdity of monster supers. Large harvests of amber comb in small shallow sections, as with the Stewarton, should be the aim of all bee-keepers: "The particular charm of the Stewarton system" when tested against even the Woodbury, with a gain in favour of the former, is due to the secondary nature of its breeding as well as its superior space. Its smaller, shallower octagon "form" during the present bitter March winds, for the better concentration of heat, gives it every day a start over its presently larger competitors with fixed space. This goes so far to answer "O. B.'s" inquiry last week, who must understand the Stewarton is but a small hive in spring, advances in dimensions with the advancing months, and thus meets the productiveness of the most prolific queens and the wants of every district and season, be they good or bad, which to my view places it before all hives and systems of management dependant on fixed space.

As to "battle of the hives," Mr. Lowe started with the proposition that "the best hive was a nullity, that 'hive had little if any influence on honey results." I showed by competitive trials an extraordinary destruction of bees. His reply was they were not the "best kind of hives for storing honey." Granted. Hive, then, has an influence—the whole contention.—A RENFREWSHIRE BEE-KEEPER.

PROPOSED TRIAL OF HIVES AND BEES.

SURELY Mr. Pettigrew cannot be serious when, in the trial of hives he now proposes, he suggests "that the hives be placed side by side and remain untouched by their owners until the end of the season." The very essence of Stewarton or any other frame-hive system of bee-keeping is that the hives should be touched and the bees helped by their owners in every possible legitimate way, for which Mr. Pettigrew's large straw hives afford no facilities, and for which alone the frame hives are adapted. To fill up seven or eight Stewarton boxes in May and so leave them, expecting the bees would render such a harvest as the "RENFREWSHIRE BEE-KEEPER'S" noted one, would be simply folly; as well might the grocer's box of equal capacity be used at once as an extraordinary destructor. His reply was of chambers wood against straw, but a hive that affords facilities for "management" against one that in a great measure affords none.

Taking the conditions as Mr. Pettigrew suggests I should certainly expect victory would favour the straw skeps; the bees in these would be much less likely to swarm, for they would have a large roomy chamber to fill which would tax their utmost energies, and until that happy consummation was arrived at they would most probably rest contented. If they did swarm with a three-winged queen the probability of her majesty returning home would be very small; the bees would, however, and again go to work without a queen.

The case of the Stewarton hive would be different. In the first place the workers having separate compartments to fill would not have the same reluctance to swarm, and if they did issue forth with an unmated queen, and no one to return them, the population would be so ekebeated that, for a time at least, honey-gathering would stop. Of course I may be met by the assumption that the queens in the Stewarton may also have their wings amputated, but I am quite sure no intelligent frame-hive user would risk the chance of his stocks being at any time queenless when competing in a match of honey-gathering. It is to my mind quite certain, other things being equal, that the stock that swarmed would lose, and the Stewarton stocks would for reasons given above be the most likely so to do.—J. HUNTER, Eaton Rise, Ealing.

DO BEES MAKE OR GATHER HONEY?

[A paper read before the Missouri Valley Association.]

AS I have been making researches and experimenting on this subject I thought I would give you the result. In taking up the subject, Do bees make or gather honey? I will not try to prov

that bees make honey, but that they gather a sweet matter—nectar—from flowers, and that this matter is transformed into honey; and may only aim in writing this will be to try to raise an interest on this too much neglected question, which is of great utility in apiculture and might have in practice very important consequences.

Some apiculturists and naturalists suppose that honey has the same composition as the nectar of flowers, and in many European bee-books it is stated that the bees merely gather the honey and deposit it without alteration in the cells, where it loses water. In the presence of the confusion and contradiction existing at present on the matters gathered and produced by bees, it is necessary, in order to arrive at a decision, to make a chemical and physiological statement of the production and composition of honey. In nearly all the flowers in which foundation is accompanied (accomplished), by the intervention of insects, there are organs, named by botanists nectaries, secreting a sweet matter generally known as nectar. From this nectar gathered bees produce honey. Now we see that nectar and honey are two distinct things and of a different composition, and that the bees owe the nectar to undergo a chemical transformation to convert it into honey.

Mr. Braconnot has chemically analysed the nectar of over thirty species of plants of twenty-five different families, and has found them to be about a constant composition. He says that the nectar is always identical with itself. It is a colourless and limpid liquid of a density little more than that of water. It does not generally contain traces of acid, it is a neutral body, and the red litmus paper is without action on it. He presents the composition of nectar as follows:—Cane sugar (or saccharose) 89, uncrystallisable sugar 10, water 77, total 100. He found no trace of mannite nor glucose. Now it will be seen that honey contains an excess of glucose, some mannite, and very little or no cane sugar. Lowitz was the first (in 1792) who found out that the sweet crystallisable matter found in honey was not cane sugar. Pronst in analysing some candied honey has shown the identity of this crystallisable sugar with grape sugar, which he discovered in the fruit-glucose. Gaillbert has placed in evidence the presence of a large proportion of uncrystallisable sugar, to which he gave the name of "sugar of honey." Later Guibourt has found some mannite in honey. MM. Dubrunjant, Rogers, and Calloux have completed by their analysis the preceding researches. Mr. Calloux gives the following as the composition of field honey: Glucose, 45.10; uncrystallisable sugar or mellose, 30.4; water, 8.6; mannite, 1.9; waxy matter, 0.6; nitrogenous and acid matters, 2.6; total, 100.

It is seen by the analyses given above that honey is a mixture in variable proportions of a certain number of definite organic compounds. In its most complete state it contains glucose, uncrystallisable sugar, mellose, some water, mannite, cane sugar, an acid, a greasy colouring matter, and some nitrogenous matter which comes from pollen. Mellose or uncrystallised sugar is a liquid sugar which does not crystallise; mannite is a body which is naturally found in manna. As it has been ascertained that mannite is a product of the viscosus fermentation of complex saccharine mixtures, we see that it is not necessary the bees have gathered the natural mannite, but that it might have formed itself subsequently in honey. Mr. Zinnermann has obtained mannits by combining hydrogen with glucose. I will mention, nevertheless, that mannite is most generally met with in mountain honey. The presence of a free acid has been found in honey. It is by the influence of this acid, supposed to be identical with the acid substance found in bees, that the transformation of glucose, of nectar into mellose and glucose, might have been caused.

It is an established fact that, if a diluted acid is made to act upon cane sugar, grape sugar is formed. It is natural to suppose that an analogous transformation under the influence of the acid principle known to exist in bees has changed the cane sugar of the nectar into uncrystallisable sugar. It is natural to come to the conclusion that the bees gather the nectar from flowers, and that this nectar in the bodies of bees, under the influence of agents not well recognised, undergoes a change and comes out in a state of honey. Glucose does not exist in nectar, but is found in large proportion in honey. I have fed some bees with a thin syrup made of twenty-five parts of crushed sugar and seventy-five parts of water, and, after it was capped by the bees, extracted it; and though it was perfectly neutral when fed or given, it had then a slight acid reaction, and contained a large proportion of uncrystallised sugar but a small proportion of crystallised cane sugar. I fed the bees also with a syrup made of equal parts of sugar and water coloured with cochineal, and after it was capped extracted, and it was very much lighter in colour.

After the experiments and chemical analysis given above I have no doubt that it will be easily seen that the bees effect a real chemical change in producing honey from nectar. This process is one which appertains to animal chemistry—it is a species of assimilation—an elaboration and excretion, of which we have so many instances in the cell fractions of glands in the animal

economy.—PAUL L. VIALLOU, Bayon, Goula, La.—(American Bee Journal.)

OUR LETTER BOX.

BARLEYMEAL FOR FOWLS (A. Wheeler).—The meal and ground oats require to be made into a crumbly paste with water.

FLAGGED FLOOR (C. Shield).—Cover it 3 inches deep with sand. Feed the three-week-old chickens with Indian meal crumbly moistened with milk, and egg boiled hard and chopped fine.

STEWARTON AND CARR HIVES (Scotus).—Each frame or bar, body as well as supers, of a well-made Stewarton, has in its centre a groove to receive a narrow embossed wax sheet, which keeps the combs perfectly straight. The Carr hive too cramped and small for practical bee-keeping. Your guide comb through inefficient attachment had given way when the swarm was introduced, hence the cross-wrought combs. The desertion was probably due to the denial of the queen without a successor to take her place. The combs can yet be utilised with perfect success by inserting each box after the alites have been withdrawn and severing any attachment to the box sides. The outer square can then be removed, leaving the frames and combs in a piece. Each comb can then be cut off close with a sharp knife and attached to bars of frame with hot wax, or be placed in the frames and kept to position with two strips of thin bandage on either side, tacked to the ends of the frame, till the combs are fired by the bees, when they can be removed.—RENFREWBURGH BEE-KEEPER.

STEWARTON HIVES (C. R. S.).—Stewarton hives are made by Mr. James Allan, Cabinet-maker, Stewarton, Ayrshire.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Barom. at last day and Sea Level.	Hygrometer.		Direction of Wind.	Shade Temp.		Radiation Temperature.		
		Dry.	Wet.		Max.	Min.	In sun.	On grass.	
March.		deg.	deg.	deg.	deg.	deg.	deg.	In.	
We. 21	29.284	86.1	34.5	N.	58.6	42.5	57.0	10.0	0.163
Th. 22	29.284	86.7	35.7	S.	58.8	43.0	57.5	8.5	0.268
Fri. 23	29.259	83.9	33.9	S.S.W.	58.9	47.0	57.3	8.1	0.266
Sat. 24	29.241	82.1	33.7	W.N.W.	58.8	42.9	51.9	94.8	0.528
Sun. 25	29.226	85.9	32.5	S.	49.2	51.1	51.3	52.7	0.028
Mo. 26	29.151	85.0	32.8	W.	42.8	54.2	59.5	65.0	0.085
Tu. 27	29.286	84.3	32.2	S.W.	42.3	55.1	52.3	106.1	0.026
Means.	29.232	84.4	33.8		53.7	49.8	54.5	85.0	0.519

REMARKS.

- 21st.—Snow lying on the walls and walks for a short time in the morning, but soon melting; very fine afternoon, but very cold all day.
- 22nd.—Strong white frost; very fine till noon, then dull and snow showers, with very bright sun for a short time between them; wet evening and night.
- 23rd.—The sun early, but bright at nine, with white frost, which continued on the walls till ten, then again foggy; fair in afternoon, but not bright.
- 24th.—Much warmer, very bright early, and a pleasant day; but rainy in the evening and night.
- 25th.—Fine morning; cloudy afternoon and wet evening.
- 26th.—Moderately fine morning, but showery afternoon.
- 27th.—Very bright about noon, but soon clouding over, followed by rain, which at times fell heavily.

Rain more or less almost every day, generally in the latter part of the day. The second half of the week warmer than the first, and the mean temperature of the whole week nearly the same as last week.—G. J. SYMONS.

COVENT GARDEN MARKET.—MARCH 28.

QUOTATIONS remain the same as last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	0	0	Nectarines.....	dozen	0	10	0
Apricots.....	0	0	0	0	Oranges.....	dozen	0	12	0
Chestnuts.....	0	0	0	0	Peaches.....	dozen	0	0	0
Currants.....	0	0	0	0	Pears, kitchen.....	dozen	0	0	0
Figs.....	dozen	0	0	0	dessert.....	dozen	8	12	0
Filberts.....	dozen	0	0	0	Pine Apples.....	lb.	5	4	0
Guavas.....	dozen	0	0	0	Quinces.....	dozen	0	0	0
Gooseberries.....	dozen	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, hothouse.....	lb.	10	0	0	Strawberries.....	dozen	0	0	0
Lemons.....	dozen	0	0	0	Walnuts.....	dozen	0	0	0
Melons.....	each	0	0	0	ditto.....	dozen	0	10	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	0	10	0	Mushrooms.....	pettle	6	1	0
Asparagus.....	dozen	0	10	0	Mustard & Cress	punnet	0	2	0
Beans, Kidney.....	dozen	1	6	0	Onions.....	bushel	0	0	0
Beet, Red.....	dozen	1	6	0	pickling.....	quart	0	4	0
Broccoli.....	bundle	4	0	0	Peas, garden.....	doz.	0	0	0
Brussels Sprouts.....	dozen	5	0	0	Parisian.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	6	0	0
Carrots.....	bunch	0	4	0	Potatoes.....	bushel	2	4	0
Cauliflower.....	dozen	2	0	0	Kidney.....	do.	5	0	0
Celery.....	bundle	1	6	0	New.....	lb.	9	2	0
Coleworts, hot.....	dozen	2	0	0	Rhubarb.....	doz.	6	1	0
Cucumber.....	each	9	0	0	Salsify.....	bundle	0	1	0
Endive.....	dozen	1	0	0	Schallots.....	bundle	0	0	0
Fennel.....	bunch	0	5	0	Shallots.....	doz.	0	9	0
French Beans.....	dozen	1	0	0	Sprouts.....	doz.	0	0	0
Herbs.....	bunch	0	0	0	Spinach.....	bushel	0	0	0
Horseshoe.....	bundle	0	0	0	Letting.....	doz.	0	0	0
Lettuce.....	dozen	0	0	0	Turnips.....	bunch	4	0	0
Leeks.....	bunch	0	4	0	Vegetable Marrows.....	dozen	0	0	0

WEEKLY CALENDAR.

Day of Month Week.		APRIL 5—11, 1877.		Average Temperature near London.		Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.		
Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	a.	m.	a.			
5	TH		56.5	38.5	46.5	5	25	6	39	9	15	9	15							95
6	F	Linnean Society at 8 P.M.	57.0	36.5	46.9	5	23	6	41	9	8	10	22							96
7	S		57.3	36.3	47.0	5	21	6	43	8	33	11	39							97
8	SUN	LOW SUNDAY.	56.2	35.5	46.0	5	19	6	44	8	39	11	39							98
9	M		55.0	35.5	45.3	5	17	6	46	4	2	2	5							99
10	TU	Royal Medical and Chirurgical Society at 8.30 P.M.	56.1	35.3	44.8	5	14	6	48	4	14	3	17							100
11	W	Society of Arts at 8 P.M.	56.1	35.5	45.9	5	12	6	49	4	24	4	30							101

From observations taken near London during forty-three years, the average day temperature of the week is 56.3°; and its night temperature 35.8°.

CUCUMBER CULTURE IN FRAMES AND HOUSES.—No. 1.



WHAT to grow, how to grow, when to grow, and where to grow, are questions which cause indecision to many would-be growers of Cucumbers at this season of the year. A few hints, therefore, may prove acceptable, and serve to assist by guiding to a successful issue.

Cucumber culture is by no means difficult, yet there are nevertheless certain details requiring special attention—failing which a full measure of success cannot be obtained. There is no mystery here; cause and effect can be readily traced, and the skilled practitioner can tell at a glance what has ruined Jones's crop or caused Brown's fruit to become yellow-tipped and curled.

Taking first the process to be followed with an ordinary garden frame upon a hotbed, we must not forget that the hotbed will exercise an important influence upon the plants, and whether that influence proves beneficial or otherwise will depend in a great measure upon its construction. The plan to which I give preference is to throw fresh stable dung in a heap for a week, taking care to make it thoroughly wet by pouring water from the roes of a large waterpot upon each layer of the manure as it is thrown together, which induces heat to generate with great rapidity. By the end of the week it is in readiness for the bed, which is made 2 feet longer and wider than the box, and carried to the required height of 5 feet in front and a foot higher at the back by alternate layers of dung and oak or beech leaves. A bed of dung alone answers very well, but leaves should always be used when they can be had, as the heat is then more lasting. Whatever be the material used it is well trodden as layer after layer is put on till the bed is finished. The sides are well beaten with the back of a fork to make them close and firm and so prevent the escape of heat; the box with its glass lights is put on, and straw or litter of any kind piled upon the edge of the bed up to the top of the box, which is thus made quite snug. The heat soon rises in the box, and in a fortnight from the making of the bed plants may be turned out of pots into little hillocks of soil consisting of equal quantities of loam and leaf soil, or, better still, old and decayed dung, taking care to have a layer of slates or tiles upon the surface of the bed beneath the soil, so as to prevent hot vapour scalding the roots. If the bed is made very early in the year the heat will decline so much before the weather becomes warm that it will be necessary to put linings of hot dung around the bed some 3 feet in thickness and continued from the bottom of the bed upwards to the top of the box, care being taken to prevent the hot rank vapour penetrating inside the frame, or the foliage will probably suffer.

Turning now to the plants the question at once arises—How shall we obtain them? Answer: Do not have them from a distance by rail; do not send a man for miles

across country with a box for them, but raise them yourself by sowing seed in a pot and plunging it in soil in the frame on the tenth day after the making of the bed, laying a piece of glass over the soil in the pot to keep the seed safe from the depredations of mice. The plants will appear in a day or two, and they may either be potted for a week or pricked-out upon the hillocks at once; in either case there will be very little loss of time, for the plants will sustain no check and will overtake larger plants which have been brought from a distance. Direct growth must be stopped by pinching off the tip of the shoot at the first rough leaf, which imparts a robust habit to the plant and contributes very materially to its subsequent vigour.

The fruit of some prolific sorts appears upon the plants while they are in a quite small state; such premature-fruit ought immediately to be picked off in order that a few strong shoots may be produced. When these show fruit nip off the tips at the first joint beyond the fruit. Add soil to the hillocks as the plants gain size till the entire surface is covered. These successive soil-dressings should consist of two parts turfy loam and one part of decayed manure. Constant attention must be given to cutting-off weakly shoots, pinching the tips of strong growths, thinning the fruit, and the foliage too whenever it becomes much crowded. Water must be given abundantly, increasing the quantity in very bright weather, and taking especial care to have it always of the same temperature as that shown by the thermometer in the frame. This is best done during the first stages of growth by putting some bottles of water inside the frame and afterwards by mixing hot and cold water.

We will suppose that the plants have spread over the surface of the bed and to some extent over each other, that all has gone well, and that some dozens of well-developed fruit have been cut. All looks flourishing; the foliage is large and green, fruit is still abundant and appears likely to continue so from the numerous young shoots springing forth on all sides, and yet there is danger lurking close at hand, for a critical period has arrived; the roots have spread in the soil and have absorbed most of its nutriment, so that unless fresh measures are adopted debility will follow, which is so often a puzzle to beginners. They look at the large green foliage, the rampant growth, and roots so abundant that the white tips are peering out of the soil, and wonder how there can be any debility. But what is the cause of this "peering out of the roots?" Is it not because they are in search of more and better food? Examine the fruit, and you must acknowledge that it is not quite so large and long as it was, that much of it exhibits a tendency to curl and grow small at the tip, and that the tips of some are turning yellow—in a word, that traces of incipient exhaustion are clearly perceptible. What is to be done? Answer: Give the entire surface a dressing 3 or 4 inches thick of cow dung or any very old rich manure, peg-down a joint or two of a few of the main branches into this, use liquid manure instead of clear water, letting the condition of the growth be your guide as to its quality and quantity, and

with ordinary attention and care a supply of really useful fruit may be maintained throughout the spring, summer, and autumn.

In the early months of spring due attention must be given to the indications of the thermometer, which should range between 70° and 80°. Air should then be admitted with caution, but a little is always highly beneficial to the plants during sunny days, and later on in summer it may be given with advantage night and day.

With regard to sorts my own favourite is Masters's Prolific, yielding fruit by hundreds, but then none of it exceed a foot in length, and very many are an inch or two shorter than that, yet all are large enough for a good-sized dish when cut up, as they invariably are before going to table. Cucumbers are here grown to be eaten, and not for ornamental purposes. Long-fruited sorts are only "good for exhibition."—EDWD. LUCHEBURST.

THE CULTURE OF CALANTHES.

[Read at the Wimbledon Gardeners' Improvement Society's Meeting.]

AMONGST the many plants which commend themselves to the gardener, few I think are more worthy of notice than these terrestrial Orchids. Their variety of colour, intrinsic beauty, and admirable decorative qualities render them very valuable during the dull period of the year. They are by no means difficult to cultivate, and will amply repay those who have the means of growing them for any labour they may bestow upon them. They are especially acceptable where table decorative plants are required in the autumn and early winter months. They throw up their spikes from 3 to 4 feet in height, and with judicious arrangement—an intermixture of foliage plants and Ferns—they take their stand amongst many of the handsomest of our Orchids.

The majority of these *Calanthes* have been imported from different parts of India. Other hybrids we have, and one especially worthy of comment is *Calanthe Veitchii*, raised by Mr. Dominy, the result of a cross between *Limnæodes rosea* and *Calanthe vestita*, and it is proving itself to be one of the foremost, if not the best, of the class to which it belongs. Under good management the pseudo-bulbs of this variety will be from 12 to 15 inches in length, and the flower spikes from 3 to 4 feet or more in height, making it particularly useful for many decorative purposes.

The *Calanthes* being deciduous require their proper season of rest, which should extend from two and a half to three months in a temperature not below 60°, care being taken not to allow any moisture to fall upon them, but be kept perfectly dry. As plants are oftentimes neglected while resting, great care should be taken with them, and especially when their period of rest is drawing to a close. In March many of the pseudo-bulbs commence growing, and if not placed near the light they will produce weak breaks, and consequently weak bulbs. Some gardeners prefer knocking the plants out of their pots and storing them on dry moss or sand; but I think this to be unnecessary, except in the case of those pseudo-bulbs which are cut for propagation. This is done by severing them in halves crossways. *C. Veitchii* may be cut into three or four parts, according to the size of the "bulbs" and the number of joints or rings. A little lime rubbed over the wounds prevents decay. These cut portions should be placed in pans of sand and on a shelf in a Melon house or Pine stove, where they will receive plenty of light and sun, keeping them dry. This process should be gone through in March, so that they will break and be ready for potting in the early part of April with the other uncut pseudo-bulbs, and receive the same treatment as them. They should now be potted singly in 60-pots, securing good drainage, in a compost of three parts of good fibrous loam and one of leaf soil and silver sand, placing a small portion of sand at the base of each bulb when potting them; then place them on a shelf in a fruiting Pine stove or near the glass in the East Indian House or similar structure, where they will have plenty of light, heat, and atmospheric moisture, using the water pot with discretion, and by no means allowing water to fall on the young growths, as they are very liable to decay at this stage. But in cases where specimens are required, say four or five bulbs in a pot, I do not advocate potting them in 60-pots, but pot them in their flowering pots at once, as there is great danger of breaking the roots by removal, they being of a fleshy nature and easily damaged. Three bulbs in a 24-pot will make a very useful specimen for general purposes. As soon as those in 60's have moderately filled their pots with roots they should be shifted into their pots for blooming,

which are generally 48's and 32's, according to the strength of the bulb. Efficient drainage is highly important, and broken crocks must be used liberally, with a layer of moss or rough peat over them, as these plants require a good supply of water in their growing season, and the soil will become sodden if proper care is not taken in this respect. The soil used at the final potting should be a compost of three parts of fibrous loam and one of dried deer or cow dung, rubbed through a quarter-inch sieve. Pot the plants moderately firm, and not too high, as is often the case, but about half an inch below the rim of the pot, care being taken not to break the roots, but ease them by removing a little soil, so as to give them freedom to work into the new soil, shading moderately from bright sunshine, or the young foliage is apt to become spotted, which very much disfigures the plants.

As they advance in growth give them an occasional watering of liquid manure, which will promote strength, without which really good spikes cannot be secured. The manure water I recommend is a mixture of guano and cow dung well diluted, or with an occasional watering of soft water, the result of which will soon be noticeable in the dark colour of the foliage. They are very impatient of excessive moisture hanging about their foliage, so that the syringe should be used very sparingly.

As soon as they have thrown up their flower spikes many of their leaves will begin decaying. They should not be pulled off until quite dead, or the pseudo-bulb will bleed, and thereby weaken the flower spike. The roots also in a great measure will cease action, so that water must now be given sparingly, the spikes deriving their support from the bulb. As soon as they commence expanding their flowers they should be removed to the intermediate house, which will both prolong them in flower and make them more hardy for other decorative purposes. The flowers being of a light nature are very useful for button-hole purposes, for which there is generally a good demand at this season of the year.

Scale is very partial to *Calanthes*, and it must by no means be allowed to flourish, or the plants will be greatly injured. The insects should be promptly removed with a sponge and a little softsoap water. The best varieties are *C. vestita*, *C. v. oculata*, *C. v. rubra*, and *C. Veitchii*.—A. SMITH, Foreman, Wimbledon House.

PRUNING OR NON-PRUNING OF FRUIT TREES.

MR. TAYLOR'S article, page 207, on the pruning and management of Plum trees, would seem to point to other fruit trees as well, and to suggest the difficult question whether pruning at all is a prudent operation, or whether it had better be left alone. This very important problem has been long before the horticultural world, and much has been said on both sides. The advocates for non-pruning point exultingly to the good crops often met with on standard trees where the knife and saw are only used to restrain unrightly growths; and certainly when a tree is not benefited by the wall it is fastened to, the more it is pruned the more the prospect of the crop is diminished, because the tree itself is reduced in size, and therefore cannot possibly produce so large a quantity as a tree of double its size. Then, on the other hand, the advocates of the pinching-in and close trimming of fruit trees point to those splendid examples of fruit that now and then find their way to horticultural exhibitions, and are said to be produced by closely-pinched miniature trees. But as Mr. Taylor justly observes, a medium course may be taken between the closely-trimmed cordon and the stately standard, and there is no doubt many good examples of this intermediate management are to be met with.

Not long ago I incidentally heard an argument between a gentleman extensively engaged in fruit-growing and his fruit-tree manager. The gentleman had been to see an exhibition of fruit at a horticultural show, and returned home full of the idea that what was grown on cordons and similar contrivances was of a superior kind to what his lofty trees produce, and urging the views he had been listening to from the advocates of that system to his man, asked his opinion on the matter. The reply of the latter was very characteristic and to the point. "It all depends, master, whether you want dozens of fruit or bushels. If you be satisfied with as many fruit as trees, we can go into the fashionable doll-house mode of growing them; but if quantity of fair good fruit be wanted, trees must be allowed to a good size to produce them." And as the dialogue took place in an orchard the man pointed to an Apple tree saying "There is a Wellington Apple that last year produced twenty

bushels of good fruit, and in some seasons has nearly doubled that. How many fancifully pruned trees would it take to produce twenty bushels, and how much ground would they occupy compared to that one?"

Now, this is only a fair way of meeting such questions, and doubtless there are many who would give the preference to the artificially trimmed trees; but ask the caterer for the market and he will say, "Give me quantity and quality too;" and he knows full well that if he wanted a few for some special purpose his large trees would produce them as well as small trees could do by the fruit being properly thinned. In places where little or no pruning is done it is not because the benefits of such are not understood, but because it is thought more profitable to omit pruning and pinching. Wall and espalier trees are often left rough for the mere reason that their trimming would both involve labour and reduce the quantity of fruit.

I will at some future time allude more particularly to Plum trees, inviting at the same time any remarks that anyone can make on the varieties that are most extensively grown in those districts famed for the growth of this fruit, together with the character of the soil and other particulars. I believe a great many Plums are grown in the valley of the Thames; will someone give us a chapter on them and other particulars relating thereto?—J. ROBSON.

FLORIST FLOWERS RAISED FROM SEED.

PETUNIAS.—I bear testimony to the great value of the double varieties from seed for greenhouse or conservatory decoration, and the singles for bedding, producing, indeed, as stated by "W." (page 179), a "most striking effect, by planting large masses of the margined and veined varieties in mixture."

VERBENA.—The popularity of the Verbena is waning more and more during each year; its place for massing is taken by foliage plants of low growth—their colour is not so soon washed out as that of flowers. Every fashion has its day: it will turn from the stiff, formal, monotonous flatness of the style fitly termed carpet bedding as did the formal gardens of past times from the devices in Box with contrasting colouring materials, and shrubs clipped into every conceivable shape from apes to peacocks—into the more enjoyable mixed style in which a diversity of objects were so blended as to produce an agreeable effect. Year by year plants esteemed for the beauty of their flowers are becoming less and less valued for massing. Verbenas are nevertheless very beautiful in the mass and a mixed bed anything but despicable, whilst for decorative purposes and grown in pots or pans they are well deserving of culture. Plants from seed, though improving, are very much behind the named kinds; yet I have had some from seed obtained in the ordinary way which have given an average number of fair flowers, and some really good.

The seed should be sown in March in pots or pans in light rich soil and lightly covered, placing in a hotbed; one employed for raising half-hardy annuals will answer, or a cucumber frame, it being important that the plants so soon as they appear be near the glass in order to be stocky, and the seed should be sown thinly. Water must be given as required to keep the soil moist, but avoid making it sodden. In the course of a few days the seedlings will appear. When they can well be handled pot them in small pots, or prick them 2 inches apart in pans or boxes, returning to the hotbed, keeping moist and shaded until established, then admit air and light freely. Stop the plants at the second leaf, which will cause them to branch freely. They must not be allowed to become drawn by keeping too warm and close, but after they are well established remove them to a cold frame, hardening off gradually, and in case of frost protecting with mats. They may be planted out at the close of May or early in June in light moderately rich soil and an open situation, yet sheltered from winds. If the plants are to form a mass the distance of planting should not exceed 15 nor be less than 12 inches apart. All they require is to be watered in dry weather and to have the shoots pegged down, and stopped if required until July. They will flower in late summer and continue until frost.

If required for pots the plants must never become potbound before having their final shift. The shoots should be stopped at every 3 inches of growth until July. They may be grown in a cold frame, or after May they may have a position outdoors on ashes, open but sheltered. Due regard being had to stopping and regulating the shoots, compact plants may be had without resorting to the orthodox wire trellis. The flower trusses may be removed until within five or six weeks of when

required to bloom. Attention must be given to watering and sprinkling overhead in the evening of bright days, and after the pots fill with roots weak liquid manure may be given at every alternate watering. A compost of equal parts of fibrous loam and leaf soil, with a third part in equal proportions of old cow dung or hotbed manure, sandy peat, and silver sand well incorporated will grow them well. Good drainage is necessary. The plants will flower in late summer, and having protection from heavy rains in a cold pit or house will continue in good condition for a long time. Verbenas are very useful in late autumn as decorative plants or to cut from. Dependence of course must be placed upon named kinds, yet some prefer to grow plants from seed. The plants raised from seed are more free in growth and not so liable to attacks of aphid and thrips as are plants from cuttings. Insects may be destroyed by fumigation or syringing with diluted tobacco juice, one part of juice to six parts of water.

CYCLAMEN PERSICUM.—The varieties of this come quite true from seed, and young plants so raised are very much superior to old plants—in fact, the latter are disappointing, young plants affording ampler foliage and finer flowers. Not a few of the old large corms refuse to grow when required, whilst others make a great effort in August at showing leaves and losing every one during the autumn. All corms after the second year are too large to be grown in a moderate-sized pot, and so uncertain as not to be worth keeping; besides, we have half a dozen varieties from a packet of seed, and the plants are so easily grown, that the growing of old corms as large in diameter as the pots is not worth the trouble. All plants, no matter which, are much healthier from seed than from portions of the parent: hence when continuance by seed can be pursued with a certainty of character in the progeny equal to the parent, the desirability of the practice becomes apparent. From a carefully selected packet of seed we are almost certain to have flowers not only good but also of a new shade of colour or something diverse in the foliage. In this way has originated our *C. persicum grandiflorum* with its beautifully marked leaves and its much larger and greatly improved flowers. We shall soon have all the varieties with flowers similarly fine, and not a few double—no improvement to the flower, but rather a disadvantage.

The raising of *Cyclamen persicum* from seed has received an impetus from the shortness of the time as compared with former practices in which the plants can be had in flower. Early-flowering plants are produced by growing them in heat up to or within a short time of flowering. A temperature intermediate between that of a greenhouse and a stove is suitable; in fact, a stove temperature is not too warm for them until advanced for flowering if plants are to be flowered the same year as the seed is sown. There can be no doubt of the best time for sowing the seed, when Nature dictates—namely, so soon as it is ripe. The old plants return to activity shortly after the seed is cast—that is, if allowed to seed, and the seed also coming into contact with a favourable medium for growth starts simultaneously with the parent plants. August, therefore, is the best time to sow the seed, which should be done in pans rather thinly, just covering it with fine soil, and placing in a frame at a stove temperature, 65° at night, 70° to 75° by day, with a rise to 85° from sun heat, and when those conditions cannot be secured by natural heat it must be secured by artificial. It is essential that the plants after they appear be placed near the glass and be kept moist, sprinkling them overhead morning and evening, as the foliage does not appear to suffer from damp when in a young state. Prick off the seedlings when showing the second leaf, or pot them off singly in small pots and place on a shelf near the glass in an intermediate house—a cool stove or warm greenhouse. If not potted into small pots from the seed pans they must be transferred to 3-inch pots when the second leaf is developed and others rising. Those in small pots must not be allowed to become potbound, but be given a slight shift, not having them in larger than 4-inch pots during the winter or early spring for economy of space; indeed, they will not require transferring from the pans, or shifting from the small pots, until January or February, and those will be sufficient to carry them up to May, when they may be placed on ashes in a cold pit or frame, keeping rather close, and protected at night with mats over the lights. They should have 4-inch pots in early June, and we have only to ventilate moderately, to shade from brightness, to duly supply with water, and to sprinkle overhead every evening if the day has been bright, and to give a shift into 6 or 7-inch pots during July, or if wanted in small pots this trouble may

be sward and liquid manure given instead at every alternate watering. By August the plants will have formed good corms and have ample foliage. It is the time when no stimulus to growth is required; it is the natural period at which old plants commence throwing out leaves and the flower buds appear. Avoid, therefore, any incentive thereto, but keep the plants moderately moist at the roots, discontinue sprinkling overhead, and admit air freely both day and night. In early September remove them to a light airy position in a house with a temperature of 45° to 50° at night, and in October they will flower, continuing for months, as all the plants will not flower together but come successively.

The above is unquestionably the best mode of growing Cyclamen persicum. It was adopted in consequence of someone differing with me in burying the corms, which was considered inadvisable from the water being liable to settle in the crowns, and when this is the case the leaves and flower stalks decay when the corms are buried. I had hitherto grown them with the corms buried, but the plants were raised high in the centre of the pot, space being left for watering at the side. So long as the water was given there it did not matter about the corms being covered with soil, but when the water was poured upon the corm in the centre of the pot the leaves became less and the flower buds dropped, the stems decaying at the surface of the soil. The force of our friend's remarks was seen and acted on. The corm is not buried after the plants have formed a few leaves, care being taken at the last potting to keep the corms well up. Water poured into the centre of the plant is certain to prove disastrous to the leaves and flowers.

Seed sown early in spring, or even now (early April), and placed in a hotbed—as that of a Cucumber frame, and the seedlings grown-on through the summer in a temperature of 65° night, 70° to 75° day, and up to 85° or 90° in bright weather, keeping near the glass, and shaded from bright sun, moving to a house in September with a temperature of 50° at night or by artificial means—will flower in winter and spring; but sowing in August is much preferable. It gives a little more trouble and occupies a little longer time; but the increased size of plants well repay for it, and when once it is practised no one will care to keep on growing corms from year to year.

A compost of equal parts of fibrous loam, old cow dung or leaf soil, and half a part of sandy peat with a few admixtures of sand and good drainage will grow them well. Some do not use peat, but I have not good loam. I may be told Cyclamens are not florists' flowers. I can only reply in the opening paragraph of your excellent little manual on "Florists' Flowers"—viz., "Florists' flowers are those flowers which by their beauty, power of producing permanent varieties, readiness of propagation, and easiness of cultivation are so largely in demand as to be especially worthy of being grown by florists as articles of commerce."—G. ABBEY.

EXHIBITING—LARGE VERSUS SMALL PLANTS.

Your last issue of the *Journal of Horticulture* contains two paragraphs which I and some friends who have read them, and privately commented thereon, consider of some significance as bearing directly on horticultural exhibitions—i.e., flower shows. There can be no use in evading the fact, but, on the contrary, every reason to recognise it, that flower shows have not always done what they were intended to accomplish, namely, be successful to their promoters financially and beneficial in other respects by those who have supported them. Beneficial they may have been to the individual winners of £50 and £20 prizes, but I much doubt if the satisfaction that has been enjoyed by the few has not been unpleasantly counterbalanced by the disappointment of the many.

Until the present year a conviction has been growing that for an exhibition to be successful it must be arranged on a scale of magnitude eclipsing all which have gone before. The prizes offered must be magnificently tempting, and the competition resulting is expected to be correspondingly splendid in its character and spirited in the race of competitors. But (a very important "but" is this) it has been forgotten that the principle of temptation is not a sound principle, and that appeals to the mere cupidity of a man carry with them a penalty, and work in a measure their own cure. It should be remembered that if a sensational prize has an alluring effect on the one hand, it has a deterring tendency on the other. Sensational prizes encourage professional exhibitors, who are comparatively few, at the expense of the very far larger number of amateur cultivators, who labour with the greatest credit to

themselves and afford the greatest satisfaction to others, who foster a love of gardening in its most beneficial aspects, increase the interest which is so desirable in gardening pursuits, and advance the craft horticultural in the most practical manner. Yet the lines on which "big shows" are founded are frequently such as to place the great majority of cultivators at a discount and give a premium to the few, who have had their reward, it may be, fifty times over.

When "big prizes" are offered a feeling is at once established that "big plants" only can have any chance of securing them. Well, it is tolerably well known how many collections of "elephants" there are in the country, and estimates are formed that it will "pay" to take them to a given distance; while those having smaller plants—it matters not how intrinsically excellent they may be, how satisfactory they are to their owners, and how creditable to the growers—decide, and very naturally, to "keep their plants at home," for the sufficient reason that it is "no use taking them for certain defeat." Many admirable examples of cultivation are, I doubt not, "kept at home" simply because of the impression produced as the result of big prizes, that only "big plants" will have "any chance" of sharing the honours, and the smaller, however well cultivated they are, will have to run the gauntlet of a certain amount of public depreciation by their being "left out in the cold." So deterrent are "big" money prizes that even the possessors of "big" specimens seem half afraid of exhibiting, for it is notorious that, as a rule, the larger the prizes the smaller is the competition. That, at any rate, has been so in the case of the metropolitan exhibitions when one followed on the heels of another in strikingly rapid succession. The competition for the "big prizes" was simply reduced to a question of "one, two, and three," and gave little trouble to the judges.

The matter becomes different when isolated and special exhibitions are projected, which are (not merely in name) national or international in their character. One or two really great and grand exhibitions during the season—one in London and one in the provinces, under the auspices of the Royal Horticultural Society—would be not only admissible but desirable, and owing to the large field, the special occurrence, and the national character of such shows they could not fail to be well supported, and especially if the schedule was not framed so as to "schedule out" the many exhibitors of, it may be, comparatively small yet eminently useful produce, in deference to the few who could "put in" a sensational appearance. One large fruit show during the year is also to be commended, and is certain of success; but three or four "large attempts" during a limited time, and in a circumscribed area, is a mere matter of "throat-cutting."

The "signs of the times" denote that "big shows" and "big plants" are losing their prestige, that quality has claims to public recognition as well as mere size. These signs are perceivable in the paragraphs I refer to as directing attention to the sale of the plants of the late Mr. Wilkins, and the proposed Exhibition at South Kensington of Covent Garden Market commodities. The large plants so skilfully grown by Mr. Ward went, with a few exceptions, in common parlance, for an "old song." It is suggestive that by the distribution of these and other "big plants" at such moderate prices that such giants are not now so popular as they once were; and equally significant is it to find that small, even the smallest, well-cultivated plants which are so valuable for many decorative purposes, and which exhibit undoubted cultural skill, are at last to have a measure of recognition accorded them. These are indeed national plants, such that spread into almost every home; and it appears that as such the patronage of the Royal Horticultural Society may be appropriately extended to them and their cultivators.

An exhibition such as the one projected cannot fail, as you say, to be "instructive," and such as will afford many a hint to the numerous gardeners, and employers of gardeners, who will visit the Show by way of noting such examples of cultivation that would be useful in the decoration of their several homes and gardens.

That is what I call advancing useful horticulture—spreading its benefits far and wide, "bringing it home" in the best manner, and to the greatest number to which it is practically applicable. More may be said on this subject—that is, on "exhibitions—large versus small plants," and I cannot but think that any suggestions as to the best mode of widening the influence of exhibitions and giving rewards to meritorious cultivation, even if presented in a "small way," would be

generally acceptable and have a wholesome and beneficial tendency.—F. R. H. S.

ROYAL HORTICULTURAL SOCIETY.

APRIL 4TH.

UNTIL the present occasion the weather on the days of the meetings—now grown into exhibitions—has been cold and unpropitious; but yesterday morning was genial and fine, a heavy thunder shower, however, occurring during the afternoon. The Exhibition occupied the extreme length of the conservatory, and in quality and variety the plants were fully equal to those arranged at previous displays. No fruit was exhibited, and only a few vegetables.

FRUIT COMMITTEE.—Henry Webb, Esq., V.P., in the chair. Mr. Rapley, gardener to Robert Hudson, Esq., Clapham Common, sent fruit of Osaston Manor Cucumber, to which a cultural commendation was awarded. Mr. J. Hudson, gardener to H. J. Atkinson, Esq., Acton, sent three dishes of Mushrooms. Mr. H. J. Jones, The Gardens, Bentley Priory, Stanmore, sent dishes of the white and pink Seakale. The latter is a variety which is of uniform yellow colour, and not tipped with purple like the other. A first-class certificate was awarded to the former, which was called Lily White.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. At the extreme end of the building Messrs. Lane & Son, Berkhamstead, arranged twelve large and excellently bloomed Rhododendrons. Some of the shrubs had nearly a hundred trusses of expanded flowers, and the effect produced by their varied colours was very fine. The varieties were Ne Plus Ultra, Prince Camille de Rohan, Queen of the West, Furity, Dowardii, Anguste Van Geert, Empress Eugénie, Hendersonii, Etienneard de Plandre, Limbatum, Nero, and Maculata Grandiflora.

Messrs. Veitch & Sons, Chelsea, staged an admirable group, comprising Ferns, Crotons, Gloxinias, Orchids, &c. The most commanding plant in this group was Anthurium Scherzerianum Wardii. The principal spathes, although not fully expanded, measure nearly 4 inches in breadth by 6 in length, and are brilliant in colour. A Scherzerianum album was represented by a spathe nearly 2 inches in diameter, the finest we have yet seen. The Ferns demanding notice were the large and fine Alsophila pycnocarpa and Dennstaedtia davallioides Youngii, the elegant Asplenium ferulaceum and Adiantum palmatum, also the distinct Nephrolepis Duffii. The most striking of the Crotons were Earl of Derby, the finest of the trilobed section, and C. McArthurii, remarkable from its twisted leaves and brilliant colours. The Gloxinias Excelesior, Mr. Gladstone, Ems, Madame Patti, Dringie Purple Prince and Prince Arthur, were remarkably alike by their rich colours and massive flowers and foliage. The Orchids were very choice; amongst them were Oncidium varicosum, very fine; Epidendrum Wallii, with rich orange sepals and mottled labellum; Sarcochilus Fitzingeri, a small Austrian Orchid, distinct and attractive; some fine varieties of Odontoglossum Roezlii and Lycaste Skinnerii, the latter ranging from pure white to rosy crimson; Angreum sesquipedale, with three flowers; Odontoglossum Cervantesii maculatum, Andersonianum and triumphans, Oncidium Forbesii and several Cypripediums.

Mr. Wills, Onelow Crescent, Kensington, arranged an extensive and very attractive group, the groundwork being composed of Myosotis dissitiflora and Isoplepis gracilis, out of which sprung as it were Orchids, Anthuriums, Spiræas, and Callas, these again having a canopy of Palms—a bold yet graceful arrangement, which was much admired.

Messrs. Rollisson & Sons, Tooting, exhibited a collection of about fifty plants in capital condition. Cocos Weddelliana was flowering, and contained also very fine fronds; Geonoma gracilis, Kentia Fosteriana, Hypophorbe Verschaffeltii, and Damonopsis ornata comprised the rest of the Palms. The Orchids were Phalænopsis amabilis, Cattleya citrina, and Dendrobium litiflorum and aggregatum majus. Erica ovata in this group was very attractive, and especially so the new Pultenaea roses from Victoria. This is one of the most promising of hard-wooded greenhouse plants that has lately been exhibited. Messrs. Rollisson also exhibited the double white Azalea imbricata, Echeveria Peacocki, and Lilies.

Messrs. John Standish & Co., Ascot, Berks, arranged a group containing excellent half-standard Azaleas, admirably grown plants of Adiantum gracillimum, Tillandsia miniata splendens, Panlinia thalictroides, large Palms, very good Cinerarias, superior pots of Lily of the Valley, also a double Clematis Aurora—an excellent group.

Mr. B. S. Williams exhibited two very fine pyramid plants of Azalea amena, the plants being about 3 feet in diameter at the base, and 4 to 5 feet high—very effective.

Messrs. F. & A. Smith, Park Road, Dulwich, exhibited a fine variety of Imantophyllum miniatum named Dulwich Beauty, having flowers double the size of those of the species; Ficus elastica aurea marginata, the leaves being faintly blotched with yellow; good single pips of Cinerarias; and a well-bloomed

plant of Dendrobium carniiferum. Mr. R. Dean, Ealing, contributed a varied collection of hardy Primulas, the most effective being P. nivalis, pure white; and P. purpurea, both excellent; also Anemone fulgens, very brilliant, and not less attractive A. spenciana.

J. G. Hepburn, Esq. (Mr. J. Loveland, gardener), Sidcup, Kent, exhibited excellent Orchids. Especially fine was Trichopilia suavis, a small plant having thirty blooms; and Odontoglossum Roezlii, a splendid plant and a superior variety; Dendrobium litiflorum, D. infundibulum, very fine; Galeandra Devoniana, Arpophyllum giganteum, and Lycaste aurantiaca completed this good group. A group of Orchids was also staged by Mr. Roberts, gardener to W. Terry, Esq., Peterborough House, Fulham, consisting of Drassavolas, Phalænopsis, Dendrobiums, and Oncidium, the plants being medium-sized but well-bloomed.

Mr. H. Bennett, Stapleford, exhibited the fine new Rose Duchesse de Vallombrosa, the habit resembling that of Jules Margottin, and colour and perfume those of La France—an excellent Rose. Mr. Bennett also exhibited fifty plants of a new Rose—Mabel Morrison—a sport from Baronne de Rothschild, with extremely vigorous foliage and almost pure white flowers. This Rose will not be in commerce this year, and will probably be exhibited in a natural unforced state. At present its blooms are rather thin, yet highly attractive—a promising Rose, which the Committee desired to see again.

First-class certificates were awarded to Mr. C. Noble, Sunningdale, Ascot, for double Clematis Aurora, distinct from its fine rosy pink colour—an acquisition; to Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, for Dendrobium scintillans, white with a blotch of yellow on the lip; to Mr. R. Clarke, Twickenham, for Cyclamen persicum Brilliant, a rich glowing crimson colour; to Messrs. Veitch & Sons for Anthurium Scherzerianum Wardii and Nephrolepis Duffii; to Messrs. Rollissons for Pultenaea rosea; and to Mr. Dean for hardy Primrose Brilliant, a flower of crimson maroon colour and very massive, the finest of all the dark Primoses. A second-class certificate was awarded to Sir T. Lawrence for Dendrobium barbatulum grandiflorum.

A botanical commendation was awarded to Messrs. Veitch for Panax laciniatum and Sarcochilus Fitzingeri. Cultural commendations to Lady Dorothy Nevill, Ditzingen, for Darlingtonia californica in bloom; to Mr. Loveland, gardener to J. Hepburn, Esq., for Odontoglossum Roezlii and Dendrobium infundibulum; and to E. W. Chaplin, Esq., Roundfield House, Broxbourne, for a very large plant of Imantophyllum miniatum. Votes of thanks were given to W. H. Michael, Esq., Cholmeley Park, Highgate, for Odontoglossum Alexandra; and to G. F. Wilson, Esq., Heatherbank, Weybridge, for Cuccumis himalayensis, the plant having a flower as large and as rich as an Allemandia; to J. H. Elves, Esq. (Mr. Hill, gardener), Coleborne Park, Chertseyham, for a superb specimen of Rhododendron Naitalii, Dendrobium Forbesii, and D. delphinianum; W. Groves, Esq., Shortlands, Kent, exhibited an improved variety of Myosotis dissitiflora; the flowers were very large and good in colour. It was recommended that plants grown in the open air be brought before the Committee on a subsequent occasion.

Medals were recommended to be given to Messrs. Veitch, Wills, and Lane for the excellence of their collections.

Twenty-eight new Fellows of the Society and eighty-five guinea members were elected during the afternoon.

The following petition, signed by all the principal exhibitors, was presented to the Council:—"To the Council of the Royal Horticultural Society.—We, the undersigned exhibitors at the meetings of the Royal Horticultural Society, respectfully call the attention of the Council to the great inconvenience arising from the meetings of the Society being held on the same day as those of the Royal Botanic Society. This inconvenience has existed more or less ever since the Council altered the meetings from Tuesdays to Wednesdays; but this year the recurrence of simultaneous meetings and shows of the two Societies is so frequent that we suggest to the Council whether it would not be better for the interests of both the Societies and exhibitors if the Council of the Royal Horticultural Society were to revert to the former arrangements. So far as the exhibitors are concerned the earlier day in the week would best suit them, as it would interfere less with the ordinary routine of their establishments." In accordance with the above requisition the Council have decided to change the days of meeting from Wednesday to Tuesday, on and after the 1st of May.

NOTES AND GLEANINGS.

ON Easter Monday 4763 persons visited the gardens of the ROYAL HORTICULTURAL SOCIETY at South Kensington. The admission fee for the day was 2d.

—We believe the exhibition of PLANTS, FLOWERS, BOUQUETS, FRUIT, FORCED VEGETABLES, AND SALADS, by the growers and salesmen of Covent Garden Market, which we alluded to last

week, will be held on Wednesday, April 18th, in the Gardens of the Royal Horticultural Society at South Kensington. Gold, silver, and bronze medals, with certificates of commendation, will be awarded by the Society to the most meritorious collections. Most of the leading growers and salesmen have already promised to exhibit, and a successful display is anticipated.

— VEGETATION IN THE CRISTAL PALACE is now attractive in its freshness, spring inside the building being necessarily in advance of the season outside. Tree Ferns are never more interesting than when unfolding large crowns of green fronds, the trunks, as it were, shooting out their stores of hidden beauty. The Ferns at the Palace are now in that state, and since many of them have been repotted they have made highly satisfactory progress. The groups of flowers in the central transept and at the front of the orchestra are extremely good, the plants being well grown and tastefully arranged. To gardeners and many others beside members of "the craft," one of the most enjoyable "peeps" in the Palace is the fernery in the Alhambra Court. It is appropriately placed, and affords refreshing relief to the rich tracery of the court surrounding. Spring bedding in the grounds (as must be the case generally) cannot equal that of last year. The continuous rains of autumn prevented the beds being planted for some weeks after the proper time, and then many of the plants "grew (not beautifully) less;" but the plants and trees inside the building were never in better condition than they are now.

— A NEW Horticultural Society has been successfully launched, under distinguished patronage, in the North Riding of Yorkshire for the encouragement of COTTAGE GARDENING. It is called "The Hornby and District Horticultural Society," and it has met with general support in the district.

— A ROSE ASSOCIATION has just been established at Horsham. It is at present the only one in Sussex, and from the very central and convenient situation of its locality it ought to prosper. It has been decided to hold an annual exhibition, the first of which will probably take place on Saturday the 30th of June. The Hon. Secretary is Mr. W. H. Sadler, Park-field, Horsham.

— DURING the reading of his paper at the last meeting of the Wimbledon House Gardeners' Society Mr. Ollerhead adverted to what he termed EXPRESS GRAPE-GROWING, and referred as a good example of it to a house of Grapes in Lord Lonsborough's garden at Norbiton. Towards the end of May, 1876, the crop from this house was cut and the Vines removed. Young Vines were at once planted, and the crop from these will be ripe in May, or within twelve months from the time the Vines were planted. We have seen this house of Grapes and can testify to its excellence. The rods are about 20 feet in length, and are bearing excellent bunches from the bottom to the top; in fact, a more satisfactory crop of early Grapes cannot be desired than the one referred to. Mr. Denning applies both more heat and more moisture in Vine-growing than most cultivators. He does not hesitate to close the vinery at a temperature of 120°, having the border very moist and the atmosphere almost saturated. Under this treatment the Vines grow rapidly and healthily, and insects give no trouble whatever. The same express mode of Grape-growing (high temperatures and much moisture) Mr. Ollerhead states is adopted at Trentham and other places renowned for Grape culture.

— We have received from Mr. Jordan, gardener to J. Bowstead, Esq., Cannizzero House, Wimbledon, a flowering truss of CLERODENDRON SLENDENS. The plant is growing in the border of a stove, and produces large heads of crimson-scarlet flowers from October until April. Mr. Jordan finds this old Clerodendron of great value for winter decoration, and certainly few flowers could be more effective than the glowing truss and glossy foliage submitted to us.

— A "SUBERBAN GARDENER" writes in high terms of POLYANTHUS NARCISSEUS "Her Majesty," which he obtained from Messrs. Veitch, every bulb of which has produced trusses containing from seventeen to twenty-one flowers. He asks if these numbers of flowers on one stem are commonly found in Narcisus. "Her Majesty" is stated to be a very dwarf and sturdy-growing variety, the flowers being creamy white with yellow cups. Our correspondent recommends it as one of the best for decorative purposes, and he thinks it is not sufficiently known.

— Mr. ABBEY thus describes Mr. Lee's new VIOLET "ODORATISSIMA," which was alluded to last week:—"The flowers are pale blue, much paler than Prince Consort, but

resembling that variety in its roundish cordate leaves. Prince Consort is the finest of all single Violets, it being robust and very floriferous. "Odoratissima" is more of the old type of Violet, though a great advance upon the pointed-petalled Russian and Czar. It is very pleasing in colour, has long stalks, distinct leaves, and sweet (very sweet) flowers, which will render it "a great favorite."

— An extensive grower says that LA GROSSE SUCRÉE STRAWBERRY is superior to Black Prince and Keens' Seedling for early forcing, setting its fruit in a higher temperature and closer atmosphere than those varieties. From plants started early in January he gathered fruit of La Grosse Sucrée the middle of March of good colour and handsome shape; some fruit weighing an ounce, and averaging six to eight fruit per plant. Keens' Seedling set very badly and swelled off still worse, and was a week or ten days later in ripening. Black Prince sets even more badly than Keens' Seedling in a high temperature, the fruit also being small. La Grosse Sucrée appears to possess a hardy constitution. It seldom fails to throw up trusses of bloom when forced early when the first crop is ripening, and thus produces fruit successively on the same plant.

— A CORRESPONDENT writing on the usefulness of CENTROPOGON LUCIANUS states that it not only flowers very freely from the points of the shoots during early winter, but continues producing from the same branches shoots lower down, bearing flowers of a highly ornamental description until May. Plants in 4-inch pots which had each a large head of bloom in November and December have now four to six side shoots with several flowers each. The first heads were cut, giving rise to the side shoots now flowering. Cuttings proceeding from the base of the plant strike readily in gentle moist heat in April or May, blooming finely in 5 or 6-inch pots. It succeeds admirably in a cool stove in a compost of parts turfy loam and one part leaf soil. After flowering in spring the old flowered shoots require to be cut away to their base, from which young shoots proceed, flowering in early winter.

— FEW hardy border flowers are more deserving of culture than MULE PINKS. The typical variety is supposed to be the result of a cross between the Carnation and Sweet William, and it is about intermediate in appearance both in foliage and flowers between Dianthus caryophyllus and D. barbatus, the flowers being double and a rich pink in colour. Healthy plants continue producing flowers over a long period, and are admired both by their colour and perfume. There is no better way of raising plants than by striking cuttings in heat at the present time. These, if judiciously treated, become fine flowering plants during the current season, and if some are grown in pots they will flower until Christmas in a greenhouse. There are now several varieties of D. hybridus, a white one—Marie Paré—being highly promising as a winter-flowering plant. This variety planted in the open ground in Messrs. Rollison's nursery yielded flowers all through the winter. The different varieties of Mule Pinks are well worthy of being cultivated, especially where cut flowers are in great demand. Cuttings also strike readily under a hand-light during the summer, and the plants thrive in ordinary garden soil.

— SOME successful experiments in DESTROYING (blowing-up) THE ROOTS OF TREES WITH DYNAMITE have recently been made on the Darlington Sewage Farm, where two hundred trees had been felled, many of which were of great size, and would under the ordinary methods of dealing with them—by burying or removal—have proved very troublesome and expensive. Before firing the charges explanations were given of the character of dynamite, and a cartridge was thrown down, broken, and then burned, to show that it could be safely handled unless exposed to a heat of 440°, which it is impossible to obtain by ordinary means. The dynamite charge was placed in bored holes, a specially prepared detonating cartridge with a fuse attached was then inserted, and the hole closed-up with earth. In about three minutes after lighting the explosion took place, and the air was immediately filled with pieces of wood of various sizes, which showed how effectually the stump had been removed. Another experiment was the blowing-up of a small Ash tree. Two charges were inserted under the roots and the tree rose in the air. The two experiments clearly proved that dynamite is a very safe and yet exceedingly powerful explosive.

— We notice a very interesting communication on the FLORA OF TURKISTAN, made by Prof. Regel, the director of

the St. Petersburg Botanical Garden, at the last meeting held on January 20th, by the Russian Society of Gardening. The special aim of the communication being to advocate the introduction into European gardens of representatives of the flora of Turkestan. Prof. Regel described the numerous, original, and most beautiful species belonging to the Compositæ, Caryophyllæ, Umbellifera, Papilionacæ, Malvacæ, and Campanulacæ, which grow in Turkestan, and which could rank among the best ornaments of our gardens by their variety and beautiful forms and colours. Most of these species are already cultivated with complete success in the St. Petersburg Botanical Garden, and they might be thus introduced in the gardens of Russia and Western Europe. Concluding his communication, Prof. Regel pointed out the remarkable circumstance that in Turkestan, even in hilly tracts, the Ericacæ are totally wanting, whilst they are so common in the highlands of the Alps, of the Caucasus, and even of the Altai.—(Nature).

— In a lecture lately delivered by Mr. R. Warrington, late assistant professor at the Royal Agricultural College, Cirencester, on the MANAGEMENT OF LIGHT LAND, he directed prominent attention to the loss of nitrates from uncropped light (porous) soil by heavy rains. From experiments made he found that 5 inches of rain falling with little intermission on a saturated soil would suffice to wash all the nitrates out of the first 9 inches. This would be less important if only the nitrates applied to the land as manure were washed away; but "unfortunately all the forms of nitrogen occurring in soil or used as manures were gradually oxidised in the soil into nitrates, and a porous uncropped soil loses by drainage much of its accumulated store of nitrogen." It has been found by experiment at Rothamstead that about 16 inches of rain have fallen since Michaelmas, and of this 12½ inches have passed through the soil into the drains, and this drain water contained nitrates equal to 100 lbs. of nitrate of soda per acre. When the land is cropped the loss of nitrates is arrested, and they are converted into plant-tissue: and the practical conclusion—and it is very important—is to apply such a potent and valuable fertiliser as nitrate of soda to the soil only when the crops are able to make immediate use of it. Gardeners may well make a note of this sound teaching.

NOTES FROM MY GARDEN IN 1876.—No. 4.

GLADIOLUS.

ALTHOUGH I had intended to have noticed other florists' flowers before this in my brief notes, the fact that several short papers have recently appeared in the Journal concerning it, and the time for planting, to which some of these remarks refer, being at hand, have induced me to give my experience of it now, as it will enable me to refer to those papers and supply answers where needed. I have for some few years past adopted the plan of peeling off the skin before planting in order to enable me to examine the condition of the bulbs, and I would advise all growers to do the same. The other day I did so with two bulbs of Jupiter I received direct from France. They apparently were sound, but on taking off the outer skin I found a decaying piece right in the centre of the bulb. As the bulb had two eyes I divided it and then cut away all the decayed parts, and have planted it. Experience tells me that these will now start and grow. Had I planted without examination this decayed part would have spread and the bulb would have perished. But all precautions seem powerless to prevent the perishing of the bulbs from what I must call disease of a very virulent nature. I mentioned the year before that my impression was that the cause of the greater virulence of the disease with us as compared with the Continent might be attributed to the greater moisture of our autumns, and that if probably the beds were covered-in from the wet weather it might be checked. Alas! this did not answer, and I had quite as violent an attack of it last autumn as ever I had, except in one memorable year at Deal, when I lost nearly my entire collection. Indeed they are very puzzling. We need to be told (and Mons. Souchet was most particular in urging this) that they should never be planted in the same piece of ground until the third year, but the magnificent spikes exhibited by Mr. Galloway at the Crystal Palace were taken from bulbs that had been grown on the same piece of ground for four years in succession, and Mr. Galloway tells me that although he has some diseased bulbs they are very few; while, despite the assertion that to allow a bulb to bloom is to ensure its decay, nothing could exceed the size and vigour of the bulbs which he lifts from this piece of ground—an evidence, too, against

the theory that dry autumns have to do with freedom from disease, as the rainfall at Helensburgh is very nearly double of that in this locality. Unfortunately no show was held in London last autumn except that at the Crystal Palace, which was far into September when all our flowers were past, so that I had no opportunity of testing the quality of my bloom as compared with that of other growers, but I was enabled to exhibit once at Dover. My spikes were many of them very fine. I had the new varieties of Mons. Souchet, or rather his successor, and think that the following will prove to be the best of those sent out in the autumn of 1875—

Camille.—Very large lilac flowers, darker in the centre, with red splashes and large violet spots.

Christophe Colomb.—Very fine flower, rosy carmine flamed with red, and lilac spots.

Hecla.—Orange scarlet with white lines; centre striped carmine.

Leandre.—Very large flowers, lilac slightly tinted with carmine; large white spots.

Phoenix.—Cherry rose, white centre and white line.

Of the older varieties I flowered well *Adolphe Brongnart*, *Antigone*, *Ariadne*, *Beatrix*, *Delicatissima*, *de Mirbel*, *Eugène Scribe*, *Geneva*, *Grand Lilas*, *Hercules*, *Horace Vernet*, *Jupiter*, *Legouvé*, *Le Phare*, *Le Veuve*, *L'Unique Violet*, *Madame Furtado*, *Marie Stuart*, *Meysbeer*, *Nichel Ange*, *Murillo*, *Norma*, *Ondine*, *Orphée*, *Pactole*, *Primatrice*, *Princess Marie de Cambridge*, *Psyche*, *Schiller*, and *Talieman*; and I am inclined to think amongst these will be found the best of the French varieties. I had also *Lady Bridport* and *Pictum* of Mr. Kelway's, the former one of the best he has sent out.

I am this year about to adopt Mr. Galloway's advice and plant deep—i.e., 6 inches. Heretofore I have planted about 3 or 4 inches deep, but he says he has found the advantage of deep planting, and if it will in any way check the inroads of the disease I shall be glad indeed. With regard to Mr. Kelway's statement that there is no disease, and that the losses arise from exhaustion of the bulbs by flowering and by bad management, I would say that it seems to me as absurd to say the first as it would be to go through the wards of a hospital and say to the surgeons, "These people are not dying of disease, it's only from the failure of strength and vitality;" while to say that they are no more subject to a disease than the *Hycacinth* is equally fallacious. *Hycacinths* die, not because they have a disease, but simply because people do not take sufficient care of them. When that is done they will continue vigorous and bloom well for years, but no care will enable you to count on the *Gladiolus*. Does Mr. Kelway mean to say that his bulbs which he sends out will resist (I suppose I must not say disease) exhaustion better than the French varieties? for if so I have evidence to the contrary. A very distinguished amateur in the north of England wrote to me that the percentage of loss in the bulbs he obtained from Langport was greater than that in the French varieties; and even with regard to so hardy a variety as *Lady Bridport* I lost six out of twelve bulbs of it last year, and in one or two instances they never bloomed at all.

I do not know what are the varieties your other correspondent Mr. Gain (who places his bulbs on sand) grows. A great deal depends on that. The less highly bred varieties are not so liable to disease, but I cannot recommend in any case the treatment he practices of placing them on sand and allowing them to root there before planting; nor can I understand Mr. Gain's experience that if left too long on a dry shelf they moulder into dust. I two years ago left by mistake a bulb of *Madame Furtado* on a shelf; to my surprise not only when I went to the shelf in the autumn had it not mouldered away, but it had actually formed a small bulb, and that bulb when planted the following year grew and flowered. When they are diseased they shrivel up and become as hard as a stone, but I have never found them go into powder.

If I still adhere to my view that the *Gladiolus* is subject to disease it is from no desire to discontinue its cultivation, but simply to express what I believe to be the fact; and I can endorse my friend Mr. Banks's statement, that "if anyone wants to know what disappointment means let him grow the *Gladiolus*." I shall this year try Mr. Galloway's plan, and hope I may be able to speak favourably of results if spared this time next year.—D., Deal.

ELECTION OF APPLES.

LIKE Oliver Twist I cry "More." I think the result will be of interest to most of your readers, and therefore ask your sub-

scribers not only to send lists themselves, but to ask their friends also to forward them. Any notes also on the causes of canker in the different varieties will be acceptable.—LEWIS A. KILLICK, *Mount Pleasant, Langley, Maidstone.*

EARLY WRITERS ON ENGLISH GARDENING.

No. 29.

HORACE WALPOLE.

WALPOLE was one of the most influential promoters of landscape gardening, for he not only advocated in his publications, but illustrated it by the arrangement of his grounds at Strawberry Hill.

He was the youngest son of Sir Robert Walpole, Prime Minister of George I.; was born in 1718. He was educated at Eton and King's College, Cambridge. In 1738 he entered upon public life as Inspector General of Exports and Im-

cluding chapter of his "Anecdotes of Painting in England," which, though printed in 1771, did not appear to the public until 1780.

In this essay, being determined to demonstrate that rural gardening was the true and new taste, to establish the opinion historians both sacred and profane which appeared to militate against his doctrines are passed over with indifference and contempt. To his sketch of the improvements introduced by Bridgeman and Kent, and those garden artists their immediate successors, we may afford the best praise. He appears to be a faithful and is an eloquent annalist.

MR. LUCKHURST'S OLD ROSE.

I wish he had told us the colour. I think the Rose must be one of those three—*Pierre de St. Cyr*, *Triomphe de la Duchère* (introduced thirty-one years ago), or *Jaune Desprez*—a Bour-



Fig. 33.—HORACE WALPOLE.

ports, which office he exchanged for Usher of the Exchequer. He was also appointed Comptroller of the Pipe and Clerk of the Extracts. In 1739 he travelled into France and Italy with Mr. Gray the poet, who had been his fellow student at Eton, but at Florence they quarrelled and parted; they were, however, reconciled a few years afterwards. In 1741 he was the representative in Parliament of Callington in Cornwall; in 1747 he was elected for Castle Rising, and in the two succeeding Parliaments for Lynn. In 1768 he retired from public business to his seat at Strawberry Hill, near Twickenham. In 1791 he became Earl of Orford on the death of his nephew, but never appeared in his seat as a Peer of Parliament. He died March the 2nd, 1797.

That the Earl of Orford was a man of taste and an encourager of the men of genius of his age is the best light in which as a public character we can look upon him. That he was gifted with a strong genius, though often asserted, is very doubtful; that his researches were frequently superficial his writings testify, and this is further supported by the fact that he was a sceptic. He very powerfully contributed to abolish the mathematical style of gardening, being one of the most strenuous advocates of landscape gardening, as is manifested in his only literary production that we shall mention, being an essay "On Modern Gardening," written in 1770, forming the con-

bon and two Noisettes. Sir Joseph Paxton answers much to the description. If it is a Hybrid Perpetual it is either *Anna Alexieff* or *Madame Louise Carique*. If it is a white Rose it is *La Biche*. I think it is either *Pierre de St. Cyr* (pale pink) or *Triomphe de la Duchère* (pale rose).—W. F. RADCLIFFE.

CLIANTHUS DAMPIERI.

Now and then we see a plant of this, but rarely a well-grown specimen. No finer subject (if indeed any can vie with it among greenhouse plants) is found among the Leguminosæ. Its quart flowers, 3 to 4 inches in length, are borne in clusters four to seven in number upon a rather stout erect stem; they depend gracefully, are of a fiery scarlet colour, with a glossy deep bluish-black centre or boss, which [seen amid or above the elegant light shining glaucous-green foliage] have quite a striking effect; but what must be the effect of *C. Dampieri* var. *Deutsch Flagge* or *German Flag*—representative in the colour of its flowers of those of the national flag of those countries? It is said to have been raised by L. Vieweg of Wegleben, and "comes true from seed." My desire to behold this, or, better, to possess a few seeds, is so fervent that I hardly care to describe it. It is alleged to be black, white, and red. "The upper part fiery scarlet, centre glossy bluish-black, keel

pure white, with sharply-defined red margin on the lower side. Separate flowers $3\frac{1}{2}$ inches and upwards long, borne in clusters of four to seven. Treated as an annual 200 to 260 flowers are produced on a plant in August." I mention the German Flag variety in hope that it will soon be procurable in German seed—collectious similar to Asters, &c. Imagine a

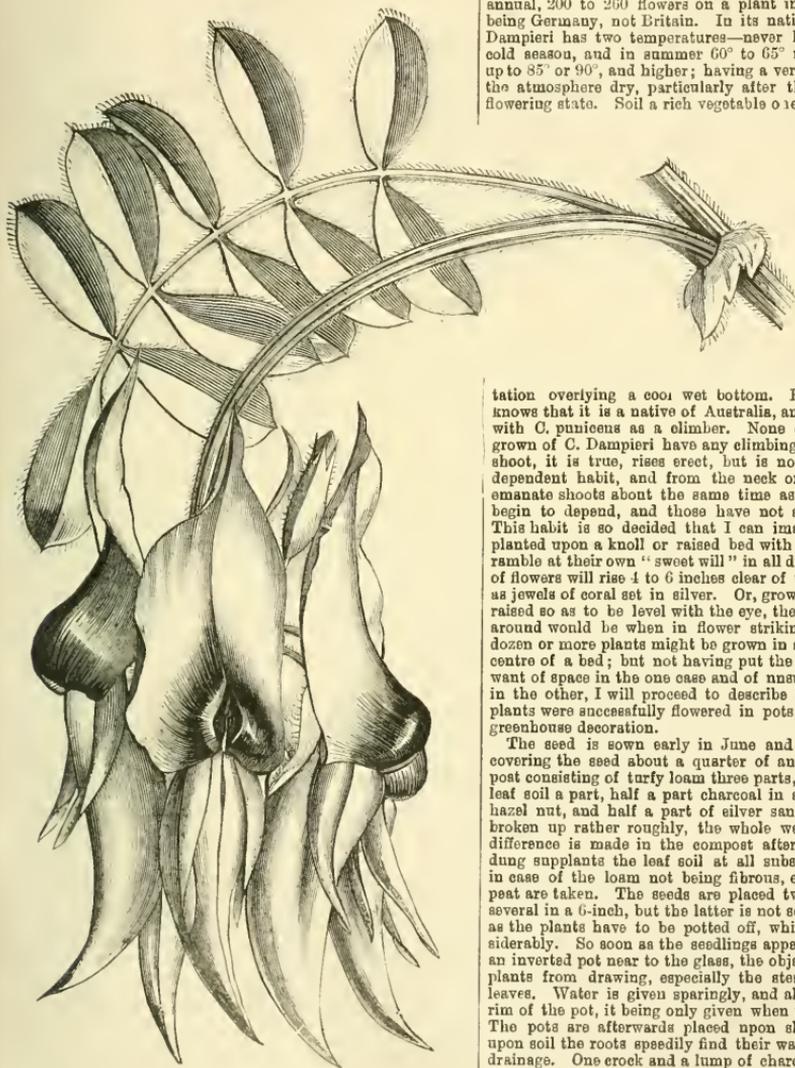


Fig. 34.—*Clianthus Dampieri*.

bed of the species and the German Flag variety intermixed, or with the species in the centre and a broad band of the variety surrounding it! It would produce a sensation.

That it is practicable to grow *Clianthus Dampieri* as a bedder in the southern half of England I have no doubt; in fact the Messrs., Veitch, Chelsea, have, I understand, treated it in that way very successfully—indeed I saw at their establishment very healthy admirably bloomed plants in June, 1874; but I was

taken aback at observing in the cultural directions, with which seed catalogues are now so replete, the following piece of information appended to this plant:—"Sown in the open air in May, it has thriven and bloomed exceedingly well without any care. It must be sown in a dry, hot, sunny situation. It should never be watered." This struck me as bearing out the idea of growing the German Flag variety, "Treated as an annual, 200 to 260 flowers on a plant in August;" the place being Germany, not Britain. In its native habitat *Clianthus Dampieri* has two temperatures—never less than 50° in the cold season, and in summer 60° to 65° night, 70° to 75° day up to 85° or 90° , and higher; having a very open exposure, and the atmosphere dry, particularly after the plant attains to a flowering state. Soil a rich vegetable one—the *déb ris* of vege-

tation overlying a cool wet bottom. Everybody, of course, knows that it is a native of Australia, and generally accepts it with *C. puniceus* as a climber. None of the plants I have grown of *C. Dampieri* have any climbing tendency. The first shoot, it is true, rises erect, but is not long ere it seeks a dependant habit, and from the neck or collar of the plant emanate shoots about the same time as the primary growths begin to depend, and those have not an upward tendency. This habit is so decided that I can imagine no finer subject planted upon a knoll or raised bed with the shoots allowed to ramble at their own "sweet will" in all directions. The trusses of flowers will rise 4 to 6 inches clear of the foliage, appearing as jewels of coral set in silver. Or, grown in a large deep pot raised so as to be level with the eye, the shoots depending all around would be when in flower strikingly effective. Half a dozen or more plants might be grown in a pot or placed in the centre of a bed; but not having put the idea into practice for want of space in the one case and of unmitigableness of climate in the other, I will proceed to describe the culture by which plants were successfully flowered in pots of moderate size for greenhouse decoration.

The seed is sown early in June and placed in a hotbed, covering the seed about a quarter of an inch deep, the compost consisting of turfy loam three parts, sandy peat one part, leaf soil a part, half a part charcoal in sizes from a pea to a hazel nut, and half a part of silver sand, the loam and peat broken up rather roughly, the whole well incorporated. No difference is made in the compost afterwards, only old cow dung supplants the leaf soil at all subsequent pottings, and in case of the loam not being fibrous, equal parts of it and peat are taken. The seeds are placed two in a 4-inch pot, or several in a 6-inch, but the latter is not so good as the former, as the plants have to be potted off, which checks them considerably. So soon as the seedlings appear they are raised on an inverted pot near to the glass, the object being to keep the plants from drawing, especially the stem beneath the first leaves. Water is given sparingly, and always just within the rim of the pot, it being only given when the soil becomes dry. The pots are afterwards placed upon slates, as when stood upon soil the roots speedily find their way into it through the drainage. One erock and a lump of charcoal are employed for drainage. Shade is given the young plants after potting them, but when established they are fully exposed to the sun. Only one plant is grown in a pot, and with a genial atmosphere they grow freely. In a cold, moist, stagnant atmosphere they will not thrive, and drip upon their branches will destroy them.

When the roots show at the bottom of the pots shift into 7-inch, keeping well up in the centre and forming a dish all around just within the rim, using charcoal as before for drainage. If moderately moist when shifted, the soil employed being also moist, do not water after potting but wait a while, returning the plants to the frame. Never water until the soil

be dry, and yet before the plants show distress, for this plant will not thrive in a parched soil. Red spider will come in due time, destroy it at the onset. Lay the plant on its side, syringe on the under side of the foliage forcibly, turning round so as to dislodge the enemy from every part. It must be done without deluging the soil with water, making it a quagmire. Repeat the syringing if necessary.

From 7-inch transfer to 11-inch pots, leaving space all around just within the rim (with the plant rather high in the centre) for watering. The drainage should be thorough—a fourth the depth of the pots. Pot moderately firm in compost rough rather than fine. Place in a pit or house, light, moderately airy, with plenty of room, having a temperature of 45° to 50° at night, 55° to 60° by day, or that of an intermediate house, mine being kept in a pit up to the end of September and then transferred to a greenhouse with a temperature from fire heat of 45° to 40° at night, 50° by day, but that temperature is too low. Notwithstanding, blooming commences in April and is continued until June. I have transferred plants from 4-inch to 9-inch pots successfully, but those who can command a position for planting out in a house with a winter temperature of 50° would, I feel certain, be amply rewarded by increased size of plant and bloom. I have sown in April and grown-on in frames, but the plants being large in autumn did not winter well, as flower trusses were shown in early winter, which in a temperature of 45° to 40° at night and 50° by day did not advance.

The plants are very impatient of a wet sodden soil, and equally so of a cold damp atmosphere, but they flourish in a brisk moist heat if ventilated freely and not shaded. Sown the middle of August in a hotbed in 4-inch pots, removed to a house with a temperature in winter of 45° to 50°, given 7-inch pots the end of September, 9 or 11-inch in February, we have plants that flower in June through the summer, which are the class of plants to be advised for bedding, for unless the plants are well forward by the early part of June there is little hope from plants planted out in the open ground in a majority of available situations in Britain, to say nothing of sowing in a "dry, hot, sunny situation in May."

As to training, let its shoots come out naturally, for it is ill-suited for twisting round stakes; but if stakes must be used employ as few as possible, not distorting by seeking to make it climb, which is contrary to its nature. The annexed figure of a spray of this plant will enable those who are not yet acquainted with it to judge of its appearance. Although very old the plant has not yet been seen by everyone.—G. ABBEY.

[This plant was discovered as long ago as the year 1699 by Capt. Dampier, the circumnavigator. He found it growing in the dry sandy soil of one of the islands called Dampier's Archipelago on the coast of New Holland, and a small specimen of that very plant is still preserved, without leaves, in the Sherardian Museum at Oxford. The late Mr. Allan Cunningham, so well known as the botanical explorer of Australia, bestowed on this plant its commemorative name; he says, "This species observed sparingly by myself in the voyage of Capt. P. P. King, R.N., in 1818, I have dedicated to that very celebrated navigator, its discoverer. In May, 1818, it was found in flower, and only with its fruit in a very young state."—(Hort. Soc. Trans. 2nd Series, i. 523.)

Mr. Cunningham met with it afterwards in the western interior of New South Wales on the eastern shore of Regent's Lake on the river Lachlan, and by Mr. Eyre and Capt. Sturt it was found on the Gowler Range and Barrier Range near the Darling, about 500 feet above the river.

It has had many synonyms, as *Clinanthus Oxleyi*, a mere variety; *Donis speciosa*, and *Kennedyi speciosa*. Mr. Woodward, in "Dampier's Voyage," called it *Colutea Novæ-Hollandiæ*.

DETAILS DESIRABLE.—The following is from a well-known cultivator:—"The communications of your correspondents are supposed to be for the good of your readers. In many cases one cannot avail oneself of the experience of the writers, because they do not give precise information. One man writes and strongly recommends a Rose, say, but does not say what soil it has been grown in, on what stock, or whether in the south of England or the north of Scotland. Take the article on Apple culture in your last paper. Where does "W. G." live? On what soil? What is the use of being told of his having a good middle-of-July Apple? No one can get it. It is just the Apple I want, but even if I could procure it without knowing the soil and climate where it succeeds, what

use is it to me? He speaks highly of the Baldwin Apple, and what makes me long for it is the statement that it has an excellent flavour, especially when baked whole. Just what I like—an Apple dumpling baked with a whole Apple."

SEED POTATOES.

POTATO-PLANTING will now be the order of the day in every garden. Selecting seed (I do not mean varieties) is a matter of considerable importance. I find that some recommend large tubers to be planted, others small sets; some whole, others cut. I have grown some excellent crops of Potatoes under very ordinary circumstances, and I consider this not altogether unaffected by the seed. In lifting Potatoes I make three lots of them—first, all above the size of a hen's egg; second, all above the size of a pigeon's egg; third, all under this size. The first are used in the kitchen, the second are put carefully away for seed, and the small tubers are given to the pigs. This middle size I always plant whole, and I have seen no reason to alter this practice. Some people cut large Potatoes down the centre or make them into two or three, and take a small piece off the end of each small one before planting. Where sets are scarce large tubers may be cut; but I have not seen nor can I imagine any advantage attending cutting a piece from small tubers.—A KITCHEN GARDENER.

PALMS.

At the fortnightly meeting of the Darlington Gardeners' Institute the following was read by Mr. Lazenby of Woodside:—

In saying a few words upon Palms I will first mention the well-known genus *Areca*, the popular species being *A. sapida*, *A. aures*, *A. Verschaffeltii*, and *A. lutescens*. This genus produces the well-known betel nut, so famous for its narcotic properties. The leaves are elegantly pinnate-plumed, and gracefully pendant. They are all very suitable for house decoration in a small state, and when fully grown form a grand feature in the large conservatories of most of our best garden establishments, and are usually well appreciated by the judges at horticultural shows. They are easily kept at a decorative size for the dwelling house by using them in 6 or 8-inch pots, feeding well during the growing season with soot water, and at all times giving liberal supplies of clear water, the soot water compensating for the loss of pot room. When grown in small pots they form useful window plants, and can be used for the dinner table; in fact, they may be placed in any part of the dwelling with good effect. The soil should consist of two parts loam, one wood ashes, one peat, and one sand of a sharp nature.

I will now direct attention to the *Demonorops*. The whole plant is of dark green, leaves pinnate, pendulous, pinnæ long and narrow, petioles sheathed in the base, armed with long black spines. *D. plumosus*, *D. palembanicus*, and *D. hystrix* are the kinds most cultivated. By growing them in a high temperature you can secure a grand plant of any of those mentioned in from twelve to eighteen months; at the same time by keeping them in small pots and feeding with manure water you can keep them in good health for two or three years, in which state they are highly useful for table decoration. Soil the same as for the last.

I will next mention the *Geonomas*, which are found growing in Mexico at an elevation of 5000 feet above the sea. Three beautiful Palms are *G. Porteriana*, *G. Seemanni*, and *G. gracilis*; the leaves of the two first are entire, plaited, deeply bifid at the apex, the fronds in well-grown plants reaching 24 inches in length, 6 inches wide at the base, increasing to 9 or 12 inches at the apex, since then they are very striking. *G. gracilis* is longer in the leaf and somewhat pendulous. At its first introduction it was thought this Palm would take the first rank in dwarf Palms; this I think will not be the case. To those who may wish to try their skill on *G. gracilis* I would say, keep it from growing in the winter months, or you will most surely lose its lower leaves from want of rest at that period. Soil, two parts of peat, one of loam and wood ashes freely mixed; drain well, give moderate shifts and plenty of water when growing freely, and shade well.

I will next mention the *Chamærops*, all of which do well in a greenhouse; they play an important part in the sub-tropical gardening of the south of England; they are found in North America, North Africa, and South Europe; humilis being the European species. They are of moderate growth, *excelsa* being the largest, at times reaching a height of 35 feet. The leaves

are fan-shaped and drooping at the apex. They will bear a large amount of hard treatment, and the plants are useful for any position.

I now come to that prince of Palms *Cocos Weddelliana*. This is no doubt the most elegant Palm in cultivation, the stem being slender, clothed with a quantity of matted black fibre, the leaves on a fairly grown plant being 2½ to 3 feet long, and in cases of good culture 4 feet long, beautifully arched, long, narrow, and dark green on the upper side and glaucous underneath. The plants must be sparingly watered, grown in a stove temperature, and slightly shaded from bright sun or they will lose colour. This Palm is greatly benefited by assisting the opening pinnae to expand. In doing this use the handle of a budding knife, place it in the open part at the base of the pinnae, and draw it gently out to the tip; by so doing you save the plants from breaking the ends of the pinnae.

I will lastly call attention to that beautiful Palm *Verachaffellii splendens*. The stem is placed upon an inverted cone of adventitious roots, the petioles are sheathing at the base and covered with spines, leaf entire, largely biped at the apex. I have in my charge a young plant two years old, with leaves 2 feet long, 26 inches wide, a grand subject but very tender; should never be in a temperature lower than 62°, or it soon shows signs of distress. The soil used consists of peat and loam with a good quantity of wood ashes. I use wood ashes freely; I do so on account of their being to most plants a first-class rooting medium, and keep the soil sweet in case of over-watering. In mentioning those few Palms I wish to create a more general use of them amongst amateurs, as I feel sure they would find them vastly more useful than many short-lived flowering plants. Combined with those they create a beautiful effect, never failing to be admired by all who see them.—(*Darlington and Stockton Times*.)

JOURNAL DES ROSES.

Chief Editor, M. Camille Bernardin.

SOME obliging unknown friend has sent me the second number of the above. It has a charming cover, "red as the Rose," to which the bride is compared whose wedding breakfast the ancient mariner delayed for such an unconscionable time. It is a foreshadowing of the "Rose Journal" on this side the water, which I see the programme of the National Rose Society promises.

The first article is on the Great Autumn Rose Show at St. Germain-en-Laye. That was a Rose show indeed. Imagine, those who can, six thousand "queens of flowers" shown by five noted rosicristes! M. Alexis Poinlat came first with 500 Rose du Roi, 130 Jules Margottin, 600 mixed kinds, and 230 of that "monstruouse Rose Paul Neyron." A medal was given by the Minister of Agriculture (when shall we have either the minister or the medal?), and the whole appears to have been a great success in its way, though the Roses mentioned are not, perhaps, very high-class ones. I pass over an able article "on growing Roses in the open air," and another charming account of a fête of Roses at Grisy-Suisnes. This latter ends with the remark that, "on his return from the crusades Thibault IV., Count of Champagne and Brice brought back from Damascus the first Roses which were cultivated in Provence." "What would be the surprise of this Count of Champagne and Brice if he could have assisted at the fair Rose fête at Grisy-Suisnes?" "On Choosing Roses" is the next article. Among the Bourbons "Mistress Bosanquet" is commended. We, I fear, are rather neglecting that lady nowadays. Also "Révêrend Dombrain" is highly spoken of. No one can speak too highly of that divine in the flesh, but as a Rose I confess I think he may be equalled; nor should I venture to submit to him when acting as judge even the most promising specimen of his namesake.

I will not go through the lists, but in general the Roses mentioned are quite as much what we should call garden Roses as exhibitioners. Page 8 speaks of a special exposition of Roses at Lyons in July last. Twenty seedling Roses were submitted to the judges. "The sovereign judges entered the palace of Flors at 10 A.M." It is not said when they came out, but only four Roses happily survived the ordeal. Madame Welche, a Tea, called after the wife of the Prefect of the Rhone, gained the first prize. Mr. Henry Bennett, rosicriste, Anglais, became her happy proprietor, I mean the Rose's. Lazarine Poizeau, another Tea, came second; then an H.P., Gabriel Fournier, and then another H.P. with a good plain English name to her, "Emma Hall;" like La France, she could not

have chosen a better model. This article is signed by M. Jean Sisley, Secretary to the Lyons Société des Rosicristes. There is an article on Mr. Laxton, a new red Rose, with a most glowing portrait. An article on the coming Paris Exhibition in 1878. Another under the head of the New Roses of 1876-1877. Some carefully guarded remarks on a very burning question just at present. Speaking of a Rose, "which ought to be a marvel indeed if all that is said of the goodness and beauty of this new queen of flower born in England is true. 'The Floral Magazine' proclaims the apparition of this Rose, which ought to constitute an epoch in the world of rosarians of all countries through its extraordinary not to say incredible colouring. This new Rosa carries the name of Glazenwood Beauty, because she comes from Mr. Woodthorpe's Glazenwood Nurseries, near Witham and Braintree, on the Great Eastern Railway. She appears to belong to the series of Roses Caspinoises, and to be originally from Japan. Growth very abundant, vigour that of a climbing Rose . . . her colour almost incredible, that we lean to the responsibility of the artist who has so well drawn the picture. . . . We have seen numbers of young plants of this new Rose in the nursery grounds at Suisnes, where they seem to please themselves to a marvel, but we await the blooming before pronouncing on the flower and its colouring."—A. C.

FRIENDS AND ENEMIES.

I QUITE agree with "WILTSHIRE RECTOR" in his remarks at page 203 in your Journal as to the destruction of the balance of power by the destruction of birds of prey; and much as I am annoyed by the depredations of blackbirds and thrushes during the fruit season, and wish they were in anyone's garden but my employer's, I know they do a positive good during the other period of the year. I think all who have a garden may have observed that during wet weather that fruit is left untested and unearned-for, but should a long spell of hot dry weather ensue, good-bye to the fruits which are not nipped-up.

Although the garden here is embosomed in trees and swarming with blackbirds and thrushes, I have not killed one of either, but I do occasionally walk about with a gun when I feel inclined. The bullfinch is my game during the winter months, but strange to say this year they have hardly taken a bird. I presume the cause is that there is a sufficiency of natural food for them without having recourse to the exploration of the buds of fruit trees. I find the best way to secure them is by a trap cage and a decoy bird hung in a quiet part of the grounds, occasionally changing the position of the cage; by this means I have sometimes succeeded in keeping them pretty well down.

To return to blackbirds and thrushes. Who has not seen the former scratching away in right good earnest the leaves in a hedgerow in search of slugs, &c., and the latter with a large snail in its beak battering it against a stone to break the shell so as to feast on the unctuous matter inside? Both of these birds do an infinite amount of good, and there ought to be a close season for them as for some other of our feathered friends.—J. GADD.

MR. THOMAS DICKSON OF CHESTER.

ALTHOUGH the firm of which Mr. Dickson was a member (Messrs. F. & A. Dickson & Sons) is well known throughout the United Kingdom, we in these more southern parts have known but little of the individual members who compose it, and so with myself. Although a good many years ago I visited the Upton Nurseries and recorded my visit in the Journal, it was not until last year that I had the pleasure of making the personal acquaintance of the two gentlemen who were until the other day the heads of it, and it was with great regret that I received an intimation that the younger of the two brothers, Mr. Thomas Dickson, was no more. During my very pleasant visit to the quaint old city I saw a good deal of him, and my intercourse has left a very pleasing recollection. A genuine Christian and a gentleman in its truest sense, one could not but admire the simplicity and gentleness of his character, and could well believe he had thoroughly won the hearts of those who were in the employment of the firm. Throughout his own county and in the north of England and in Scotland he was well known, and wherever known valued, not only for his amiability of character but for his business habits. Among my projects for this season I had looked hopefully to renewing

my intercourse with him, but this, alas! is not to be. He came south last autumn to try the effect of a warmer climate, but without avail, and he has died at the comparatively early age of forty-two, leaving a devoted wife and three little ones to mourn his loss; indeed, one may say that wherever he was known it will be felt that a blank has been made, and he affords another example of a truisim we are too apt to forget, that a man may by a quiet and consistent life make a gap as much felt as that occasioned by any of the more clamorous claimants for the good will of their fellow men.—D., Deal.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

BADHINIA PETIOLATA. Nat. ord., Leguminosae. Linn., Decandria Monogynia. Flowers white.—“*B. petiolata* was introduced by Linden from New Grenada, and by him was sent to Kew, where it flowered in October, 1862. I am indebted to the excellent New Grenadan botanist M. Triana for identifying it with the plant of Mutis.”—(Bot. Mag., t. 6277.)

ONCIDIUM CHEIROPHORUM. Nat. ord., Orchidaceae. Linn., Gynandria Monandria.—“A charming very sweet-scented little species allied to the *O. stramineum* (t. 6254), but a far more elegant plant, with narrow leaves, an almost filiform scape, and brighter-coloured sparkling yellow flowers. It was discovered by Wareszewicz on the volcano of Chiriqui, at an elevation of 8000 feet, in New Grenada (near Panama), flowering in December, with the thermometer some few degrees above freezing point. It has been long cultivated on the Continent, and first of all at Hamburg, a town once so famous for the Orchid collections of its high office-bearer, as of Senator Janisch and Consul Schiller, and was soon thereafter introduced into England. It was flowered at Kew in December, 1872, from plants reared by Messrs. Veitch the previous year.”—(Ibid., t. 6278.)

CORDIA DECANDBA. Nat. ord., Boraginaceae. Linn., Decandria Monogynia.—“A beautiful shrub, native of Central and Northern Chili, where it is well known for the excessive hardness of its wood, which is much used for charcoal, whence the local name of Carbon for the species is derived. The first information we possess of it is from specimens gathered in 1825 by Macrae, a collector in the employ of the Royal Horticultural Gardens, who visited Chili on his way to the N.W. coast of America, since which period it has been met with by many botanists and voyagers. It is easy of cultivation, and well worth a place in a warm greenhouse on account of the pure white of the blossoms that are copiously produced in spring. The following account of the wood is given in the Appendix to Mrs. Graham's (afterwards Lady Calcott's) ‘Chili’.—‘Carbon grows in the districts of Guasco, Coquimbo, and Cuzcuz only. It is short and thick and used for small articles of turnery, but it is incomparable for firewood. Two logs that might not each be more than a yard long and one-third thick suffice to keep a stew boiling night and day, besides other kettles, enough for eight or ten people.’ Mr. Cruckshanks, from whom there are specimens in the Hookerian Herbarium, states that the wood is extensively employed for fuel in smelting copper (as the dead and w thered stems of the Cactus are for refining that metal) in the mining districts of Coquimbo, so that in many places the district is almost cleared of these plants. *Cordia decandra* was introduced by Messrs. Veitch, who sent the specimen here figured in May, 1875.”—(Ibid., t. 6279.)

TUPISTRA MACROSTIGMA. Nat. ord., Liliaceae. Linn., Hexandria Monogynia.—“We have a considerable suite of specimens in the Kew herbarium, gathered in the mountains of Khasia at an elevation of between 2000 and 4000 feet by Griffith, and Hooker, and Thomson. There is a fine drawing at Kew yet unpublished by Cathcart of the true *T. squilida* from Sikkim. The drawing of *T. macrostigma* was made from a plant which flowered in Kew Gardens in December, 1876, which was sent to the collection by Dr. Regel in 1872.”—(Ibid., t. 6280.)

DRACOEPHALUM SPECIOSUM. Nat. ord., Labiate. Linn., Didymaia Gymnosperma. Flowers purple.—“Discovered by Wallich's collectors in Nepal, and afterwards almost simultaneously found by Madden in Garwal, by Strachey and Winterbottom in Kumaon, and by myself in the Sikkim Himalaya, all at elevations ranging from 12,000 to 15,000 feet above the sea, where it forms a robust handsome plant in grassy places. The genus is a very considerable one, containing many species well worth cultivation, especially on a rockwork. It extends from Europe to the Altai and Himalaya, where about thirty species are known. The specimen here figured was received at Kew from the Rev. Mr. Harper Crewe, who

raised it from seeds sent from Sikkim by Mr. Elwes. It flowered in June last.”—(Ibid., t. 6281.)

HYPOLYTRUM LATIFOLIUM. Nat. ord., Cyperaceae. Linn., Triandria Monogynia.—“Now that elegance of form is beginning to be appreciated in cultivation, both Gramineae and Cyperaceae will claim a consideration which has hitherto been but grudgingly awarded to them. The plant here figured was sent to Kew from Ceylon by Dr. Thwaites, an excellent judge of what is horticulturally an acquisition, as a very ornamental one, and well worthy of cultivation in a tropical house. And this it has proved from its graceful bright green foliage, its rich brown inflorescence, and its permanent freshness. The genus *Hypolytrum* is a thoroughly tropical one, found in all three continents, and the species have wide ranges; the present extends from Hindostan and Ceylon to China and the Fiji Islands, and has been identified with an African species. It is common in mountain woods of Ceylon and in the Malay Peninsula, but has not been found in northern India. It was raised from seeds sent by Dr. Thwaites to Kew, and flowers at various seasons.”—(Ibid., t. 6282.)

PEACH—Belle Impériale.—“This is a late variety of Peach, well deserving to be better known and more extensively cultivated. It ripens about the same time as the Late Admirable, and is often highly coloured like the Bellegarde. The fruit is large, somewhat ovate, being taller than broad and rather smaller upwards, marked with a shallow suture, and having a slight terminal depression. The skin is finely downy, of a pale greenish yellow, more or less marbled with rosy crimson on the sunny side. The flesh is pale greenish white, very juicy and tender, deeply stained with red at the stone, from which it freely parts; it has a pleasant and refreshing flavour, fully equal to that of the best late varieties in cultivation. The leaves are crenate at the margins and furnished with roundish reniform glands at their base. Mr. Scott, in the ‘Orchardist,’ describes it as of the first size and quality, ripening in September, and he gives Admirable de Septembre as a synonym. He further states it is ‘a variety of the Peach Bon Ouvrier, which it much resembles; skin pale yellow, with a bright purple flush on the sunny side; flesh vinous, sugary, rich, melting, and excellent. Introduced by me from Paris, 1867.”—(Florist and Pomologist, 3 s., x., 25.)

SEEDS OLD AND NEW.

No doubt many of your readers, with myself, have been struck with the apparent inconsistent teachings on the germination and results of seeds. We are often told to procure the oldest seeds we can of Melons, Cucumbers, Celery, &c.; and if we ask Why? the answer is, “They produce the best fruiting plants; they grow less to wood and more to fruit.” Well, this is very good as regards Melons and Cucumbers; but it is not fruit we want from Celery—just the reverse; we want it not to go to seed, but to strong healthy foliage. Now if old seeds of Melons and Cucumbers produce fruit or seed sooner than plants raised from new seed, why not argue by analogy and say the same about Celery and such like? The Turnip is said to bulb better and is not so liable to run to seed when the seed is two or three years old. The same is said about the Beetroot and Mangold Wurtzel; if any bolt the explanation is, “Oh! new seed did it.” The Cabbage, too, is reported to close more compactly and is less liable to go to seed if grown from old seed. I might cite many more instances, but the above will convey my meaning. I hope that this matter, which is at present enveloped in mystery, will be elucidated in the columns of the Journal.—B. G., Co. Down.

NEW BOOK.

Album Benary. Parts 1 to 4. Ernst Benary, Erfurt, 1876.

This is a work of very great value that has been issued by M. Ernst Benary, the celebrated seedsman of Erfurt in Germany. It consists of beautiful coloured plates, in which it is intended to illustrate the whole of the principal vegetables usually grown in the kitchen garden. There are already four parts of the Album published. The first contains in its four large quarto plates three of Cabbages and Kales, and the fourth is devoted to Carrots. Of the former eighteen varieties are figured, and of the latter there are thirteen. No. 2 contains one plate of Cabbage Lettuces, one of Cucumbers, one of Kidney Beans, and one of Radishes. In No. 3 we have another plate devoted to Cabbage Lettuces, one to Beets, one to Kidney Beans, and the fourth to various kinds of culinary roots, such as Chicory,

Chervil, Parsnip, Salsify, Parsley, Ramplon, and Scorzoner. In Part 4 we have a plate devoted to Mangold Wurtzel and Sugar Beets, another to Mangold Wurtzel only; one to ornamental Gourds, and one to Onions. The names are given very fully in four languages—German, English, French, and Russian. To all seedsmen and gardeners this will be a book of great value, as the plates are so well drawn and so faithfully coloured that no one who has any knowledge of the subject can fail to recognise the different varieties; and to those who are only partially acquainted with the various sorts of vegetables it will be most instructive, as conveying the information required in the most expressive and convincing form.

We highly commend this useful and beautiful book to all who are interested in the subjects of which it treats.

INSECTS AND AMMONIA.

"B. G., Co. Down," in referring to this subject on page 155, states that I have distinctly affirmed that ammonia arising from guano heated in a liquid state will destroy thrips and red spider. Your correspondent further states that "thrips is less hardy than red spider." My experience on the matter was described as follows:—"Impregnating the air with ammonia is, in my opinion, the most simple, safe, and effectual means which can be employed for keeping the foliage of Vines free from red spider. In damping and closing the vinerie in the afternoon I always use guano water. I employ no other preventives as sulphur, &c., good though they may be; and while I never syringe the Vines, I feel quite certain that a red spider has not ventured under the roof and lived for the past half dozen years." I further stated that a "much stronger volume of ammonia is necessary to kill mealy bug than is required for red spider, and it must be stronger still to kill thrips." Those statements I adhere to.

I am quite satisfied of the benefit resulting to Vines when stable manure and leaves are allowed to ferment in the house, provided the material is in a sweet state when the foliage of the Vines is expanding, otherwise the practice is dangerous. But there are many vinerie so arranged that fermenting manure cannot be used, and it is then that guano becomes so valuable as an insect-preventive, and as affording a safe and wholesome stimulant to the Vines. At the time I penned the observations alluded to I had special facilities for testing the value of guano for producing an atmosphere which the Vines rejoiced in, and which red spider detested. I had not the slightest difficulty in keeping red spider at bay, but I could not destroy thrips and mealy bug without using the guano at a strength endangering the safety of the Vines and plants. Some plants are more susceptible of injury by the fumes of ammonia than are others, especially Ferns. Gesneraceous plants and *Spiræa (Hortia) japonica* are also easily damaged, as they are also by the fumes of tobacco.

After the Grapes have been thinned and are approaching the stoning period and onwards to ripening, I do not think that guano can be sprinkled too freely when the vinery is closed in the afternoon and every part is wet as it should be, and the temperature from the sun is from 80° to 90°. That moisture-laden, ammonia-impregnated tropical atmosphere is in a high degree conducive to the health of the Vines, and correspondingly promotive of disease in insects, especially red spider. I have the best reason for advocating the application of guano water to the walls and floors of vinerie at the time of closing them after the Vines have fully expanded their foliage, and until the Grapes commence coloring. If that practice is adopted in conjunction with otherwise good management, red spider will do little harm. In my case—and I was then practising in one of the driest localities in Britain, where the soil was light and Dwarf Kidney Beans on the border adjoining the vinery were devoured with red spider—the pest did absolutely no injury in the vinery, although, as before stated, the Vines were never syringed. For a period of ten years, although red spider abounded during the heat of summer, exhausting the kitchen-garden crops and defoliating fruit and forest trees, I never saw one of these insects on the leaves of the Vines, nor on any plants in the vinery, unless I introduced them for purposes of experiment. Guano was the sole and effectual antidote, and it is still used in the same vinerie with the same effect—healthy Vines and no red spider.

The period of the year has arrived when Vines are generally in active growth, and when red spider will soon increase and multiply if it can find suitable quarters. It is a part of the gardener's duties to render the conditions unsuitable for

the prosperity of the pest, and a safe, certain, and beneficial means of doing so is to use guano freely. Water the floors and walls with strong guano water, but not the hot-water pipes, at any rate when they are really "hot," for that would be abusing a system which is good in itself, cheap, easy of application, and in no way unpleasant to the operator or others visiting the vinerie.

Guano is so useful in many ways in gardens that every gardener should have it at his command; and especially where Vines are grown and fermenting manure cannot be placed in the vinerie, "genuine Peruvian" is of the greatest assistance in promoting healthy foliage, and checking the increase of the chief enemy of the Vine—red spider. Guano is also valuable as a surface-dressing for plants and crops, for making quickly liquid manure, and for destroying slugs, which it does more effectually than lime, salt, or soot.—J. WAIGHT.

RIGHT TO REMOVE FRUIT TREES.

MARSH v. MARSACK.

THIS cause was tried in the Tonbridge Wells County Court before J. J. Lonsdale, Esq., Judge. The plaintiff was a market gardener, and for some years held land, and received notice to quit last year, Mr. Marsack having taken the land and agreed to take the trees and Strawberry plants. Marsh gave particulars as to the interview between himself and defendant, adding that a complete bargain was made for the trees and plants, and also a heap of manure, the latter of which had been paid for, and therefore there was an acceptance. Plaintiff put the things there, and as a market gardener had a perfect right to remove them.

He received the notice produced, requiring him to go out on the 29th September, the latter clause thereof adding that he was to go out at such time as he entered on the tenancy. Having taken the land in April he understood that he was not to go out until March. On the 6th of October he went to the land and found his lock broken off the gate and another put on. In consequence of what Mr. Marsack's man said to him he went and saw Mr. Marsack on the 9th of October, and he then agreed to take the things, inquiring as to the names of the trees and the varieties of the Strawberries. He agreed to take the whole of them by valuation, and also ultimately took the heap of manure. He told him that he did not think he had to go out until March, and asked him for a little time to have an auction sale to dispose of his things, and he allowed him a month to do so. He got Mr. Charlton, nurseryman, to make a valuation of the trees and plants in consequence of Mr. Marsack's agreement to purchase. The amount of valuation was the present claim, and that he sent in three or four times but got no answer. Ultimately Mr. Marsack stated that he had nothing to do with it.

Cross-examined. Had a public sale, and tried to sell all he could. The ground was about 3½ acres, with nearly half an acre of garden. It was let to him on the usual agricultural tenancy, with permission to break it up for a market garden. Always paid the rent yearly at the audit from Michaelmas to Michaelmas. Did not understand from that notice that he had to go out at Michaelmas. Did not know it until he received a letter from Mr. Delves after Michaelmas. His impression was that he was to take a six-months notice to leave at the time he took the land. Did advertise the sale of Strawberry plants on October 6th in consequence of having to leave his farm. When he paid the first year's rent at Michaelmas he was allowed £1 for not having had the land during the winter months. Would not say positively that it was the 9th when he saw Mr. Marsack. The object of his visit was partly to obtain time, and Mr. Marsack engaged ten days from the 16th, and he fixed his sale for the 27th October. Mr. Marsack said he would have nothing to do with the outhouses, but did not say that he would take only one hundred each of the varieties of Strawberry plants. He agreed to take them all. The surplus plants only were inserted in the sale catalogue. Mr. Marsack said nothing of the sort about removing the trees if he (Marsh) had a right to do so. Told Mr. Marsack he was going to have them valued, but mentioned no valuer to him. Sent the bill in soon after telling him. Dated it the 29th September; dated another bill the 27th October, as the day on which it was valued.

By Mr. Burton. Put in the trees and Strawberry plants himself. If Mr. Marsack had not taken them he would have removed the trees and the plants also. Mr. Marsack would not allow him to remove them afterwards.

deners have in this to act according to circumstances. Some owners of gardens do not object to afford sufficient labour, but are very chary of purchasing either bulbs or plants. In that case the gardener will do well to make the most of his stock. Another place may be short of men to do the work, yet the gentleman is willing to spend a sufficient sum for bulbs and spring flowers annually. The gardener would manage this place differently; he would not be able to pay that attention to the plants that they require, and would find it answer to give them to his poorer neighbours; throwing them away would be willful waste. "A DOCTOR'S GARDENER" has in a recent number of this Journal so fully detailed the best way to manage with Hyacinths after flowering, that any further remarks from me would be quite superfluous. Tulips require the same treatment as Hyacinths. The Lily of the Valley is everywhere a favourite, but it is not generally known that they may be grown in the same pots year after year. In one instance they were grown in 8-inch pots without shifting for thirty years, and every year they flowered well. We now generally purchase single crowns at so much per hundred. They are potted, say eighteen or more in an 8-inch pot, and they flower well the first year, but as soon as the flowers fade the plants are not turned out in the frosty air and left to chance. They are placed in cold frames and supplied with water as it is required. In May the plants are turned out of doors, and if well attended to with water until the leaves fade we obtain a much better bloom the second year than the first. Mr. Wier, who shows very good plants of Lily of the Valley, has grown and exhibited the same plants for ten years at least. *Spirea japonica* does well with the same treatment; and the *Dentzia gracilis*, which I have exhibited for several years in London, were raised from cuttings about twelve years ago, and have been shifted-on until they are now in 12-inch pots.

We are in this week potting and training hardwooded plants; they are mostly small plants intended to be trained into specimens. In order to accomplish this they must be attended to with incessant care. Some species are very liable to be attacked by red spider, others with mildew, and all of them may be irrevocably ruined from becoming covary at the roots. Epacris should be cut down closely as soon as they have ceased flowering. They may be cut to within an inch or two of the old wood—that is, if the plants are not intended to grow large. If very large specimens are preferred the young wood may be just cut back and the plant trained into shape. Camellias start into growth immediately they have ceased flowering, and should be placed in a close moist atmosphere, which will much improve them by causing a more vigorous growth. Pelargoniums are also kept in an airy position near the glass, and are fully exposed to light. The growths are tied out as they advance on large plants.—J. DOUGLAS.

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

PASTURE TREE FOR VINE BORDER (J. P. K.).—It is all the better for the purpose having been turned over repeatedly during three years, especially if the soil is heavy and adhesive in its nature.

GREENHOUSE FOR PROFIT (*Live and Learn*).—No one could advise you trustworthily without knowing previously more than can be told by letter. You must grow whatever is in demand near you, and as a guide to the extent of the demand, the first week of "Gleanings for the Many" you can have it free by post if you enclose seven postage stamps with your full direction.

GLAZING WITHOUT PUTTY (J. P. of York).—The illustration in our Journal of March 15th is intended to show how the glass is fixed; it is not artistic, but tabulated as a guide easily to be understood by practical men.

TABLE PLANTS (L. F., Belfast).—Six plants suitable for table decoration and exhibition during the first week of "Gleanings for the Many" are: *Ascaia lophantha*, *Coleus Duchesne* of Edinburgh, *Phoenix rotundifolia* (Palm), *Lomaria ciliata* (Fern), and *Coprosma Baneriana* variegata.

MAKING AN ASPARAGUS BED (A. H.).—Eschew the old laborious plan of raised beds and sunkon alleys and proceed as follows:—See that the soil is well mixed, broken up to a depth of 15 inches, and thoroughly enriched by having a large quantity of rich manure mixed with it. Select forthwith the strongest plants having plenty of white healthy roots, planting them in this prepared bed 2 feet apart, spreading the roots carefully outwards, covering both them and the crowns with 6 inches of soil, and after the planting is done give the surface a light covering of old manure. In the ensuing season of growth carefully keep the weeds, pour liquid manure over the entire bed as frequently as possible, cherish the growth with jealous care,

and next year you may fairly expect a moderate supply of large excellent shoots, and in the following year a still more abundant one.

NEPENTHES CRISTATA.—"J. F." will be obliged for directions how to cultivate this plant, and for information as to its native country.

ECHECHIAS (G. H. F.).—It was not introduced until about thirty years after London published his "Encyclopaedia."

MR. WARD'S PLANTS.—Mr. T. M. Shuttleworth asks me to state that he only bought three *Azaleas* at the sale of Mr. Ward's plants.

ANNUALS FOR BEDDING PURPOSES (J. S.).—Two of the best are *Saponaria calabrica* and *Tagetes signata pumila*. *Lobelia* is also treated as annuals, but the seed should be sown in autumn. If you state the plants you have, we will tell you how to arrange them in a tub or border.

DECLAMING TREES FLOWERING (*Edm.*).—Place them in a cool greenhouse and sufficient water to prevent the soil becoming dusty dry. In May the plants may be placed in a cold frame. When they start into growth in the autumn let the plants be turned out of the pots and part of the soil be removed, repotting again in the same sized pots, or if the plants are strong the pots may be larger. The plants should be placed in a warm greenhouse in November.

REPOTTING CAMELIAS AND AZALEAS (T. Keith).—The Camellias having done flowering shift them into pots a size larger, being very careful not to injure the roots, which are very tender, removing so much of the old soil as can be done with a pointed piece of wood from the parts of the ball not occupied with roots, draining the pots well. If the pots admit of three-fourths soil around the balls they are quite large enough. When the *Azaleas* have bloomed shift them into larger pots, keep the neck or collar of the plants rather high in the centre of the pots, water carefully until the roots are working freely in the fresh soil, and then more freely. The plants should be kept rather close and moist until the potting is recovered from, shifting them from bright sun.

VERBENA VENOSA (F. L.).—Old plants are as good as young, and may be transplanted now into bedding quarters, dividing them if large, and if divisions can be had with roots, cutting away the old growths if not already done. The old plants should be cut down before winter, and have a mulching of some partially decayed leaves or manure placed over them.

EXHIBITING ROSES (A *Wanderer* Exhibitor).—I do not know where boxes, &c., are to be had but will make inquiries. Our schedule is arranged, so that we cannot make any change, and I think Classes 11 and 12 would meet each a case on your suggestion. It might be worth while another year to moot the question.—D. DUAL.

BEDDING TULIPS (H. S. James).—We do not suppose that the Tulips would suffer very much from being left in the ground, as they are all hardy varieties, and in the same lot not a good one. Why not take them up and lay them in thickly in some out-of-the-way spot in the kitchen garden?

BULBS FROM THE CAPE OF GOOD HOPE (G. M.).—*Brunsvigia*, *Hemantus*, and *Norina*, with *Amaryllis* (probably *A. Belladonna*) seen in flowering about September, the leaves commencing growth a year afterwards, and the plants may be placed outdoors in the winter, dying-off about May. In early June the plants may be placed outdoors in a cold frame, or in a tub or border or other structure, and exposed to the weather up to August or until their buds push, when they should be moved to the greenhouse, in which they should have a light airy situation. After the leaves appear copious supplies of water are required. The plants should be continued in the greenhouse until the end of May or early June. The *Brunsvigia* is the better in August under a gentle bottom heat, the pots being plunged in a temperature of about 75° to 80°, removing to the greenhouse when the buds show. The bulbs should be covered to the neck. The *Nerine* and *Belladonna Lily* may be planted out 4 inches deep in well-drained soil in front of a south wall, and the plants are much better with a handglass over them during the winter. *Cyrtanthus* should be potted in the same as *Brunsvigia* (we like to have them up to the neck), also *Hemantus*. The *Cyrtanthus*—being allied to *Valloia*, and like it evergreen—requires to be kept moist. It also may be placed outdoors in summer, housing in September. Some of the species of *Cyrtanthus* are deciduous, and these do not need water when at rest. *Urepsalon* and *Albuca* deciduous, and these do not need water and be kept in a light situation, or planted out in front of a south wall, protected with glass in winter; better potted and kept dry in winter, watering freely when growing. *Anterium*, *Omnigobium*, and *Drimis* to have the bulbs covered about an inch deep if grown in pots, and watered freely when growing, and kept dry about 4 inches deep, and protect from wet in winter as well as frost. *Buphonia* should have the treatment of *Brunsvigia*. *Cucurbit* cover with soil, just leaving the apex clear, watering carefully until the growth takes place, then freely. *Isia* have the bulbs covered, kept on shelves near the glass, and growing in winter; keep moist until the leaves turn yellow, then discontinue watering. *Watsonia* to be potted an inch deep if grown in pots, or plant outdoors 3 inches deep, treating the same as *Gladioli*; or pot and keep in frames, removing to the greenhouse in May, or plant out from pots in the first position; and water until the growth commences, keeping near an inch deep, and not water until growth commences, keeping near the glass, ceasing watering when the foliage dies down, and dry when at rest. *Ferraria* pot an inch deep and plant out in May, or flower them in pots in a light position; and water until the growth commences, keeping near an inch deep, and the soil to be kept moist from the first, and watered freely when the plants are growing. They do well in a sheltered situation outdoors, planted 3 inches deep. *Pelargoniums* just at the end of the season may be potted an inch deep, and watered freely, what is over the tubers with soil, watering carefully until in free growth; when at rest keep dry, affording a light well-ventilated position. Some of the tuberous *Pelargoniums* are very pretty.

NAMES OF PLANTS (Sudrip).—1, *Berberis Darwinii*; 2, *Eucalyptus radicans* variegata; 3, No spores on the food; 4, We think *Aschmannanthus Lobbianus*, but cannot determine without flowers.

POULTRY, BEE, AND PIGEON CHRONICLE.

EGGS FOR SITTING.

MANY beginners in the poultry-fancy seem to think that eggs intended for sitting need a particular kind of treatment and manipulation. While there is no doubt that careful handling

and protection frequently greatly aid to the successful result, still it by no means follows that eggs will not hatch if subjected to rough treatment and exposure to cold.

So far as the latter is concerned, we would much rather our eggs be kept in a room where the temperature ranged from freezing point to 40°, than in a place where the heat reached as high a point as 80°. Of the two extremes we would also prefer to trust our eggs to the lower: by that we mean that we are convinced that any ordinary degree of cold—any 10° below the freezing point—does not necessarily kill the vitality of the egg, so long as the shell is not broken by the action of the frost; and, on the contrary, the vitality of the egg is greatly injured and decreased by exposure to a temperature of 70° to 80° or thereabouts, for any considerable time.

Regarding the careful handling of eggs, experiences differ. There seems to be no doubt but sudden violent jarring will sever the connecting ligaments in the interior of the egg, and thus destroy its vitality; but eggs will stand the trembling shaking motion of a wagon or car, and give the most satisfactory results in hatching. We had a very satisfactory illustration of this the past season. A friend requested us to bring him a sitting of eggs. We wrapped each egg in paper, and putting them in a small basket brought them to the city. The ride by steam cars, of course, was not very severe on them, but the forty-five-minute ride on the horse cars was made very rough, from the fact that, becoming very much interested in conversation, we placed the basket on the floor of the car between our feet, forgetful of its contents and its position until nearly at the end of the route. The result was—nine eggs of the thirteen hatched out strong healthy chickens; still we do not advise eggs being thus treated to ensure their successful hatching.

The real care necessary is very little. Simply gather the eggs daily, mark them plainly (variety and date), washing them if much soiled, and lay them away in a cool room. If intended for use within two or three days simply place them in a basket or other receptacle; if it is necessary to keep them longer it is best to have flat boxes of about 3 or 4 inches in depth, in which place an inch or two of bran or sawdust—we prefer bran; place the eggs in this large end down, as close as you can pack them. Some persons insist that the small end down is proper and preferable. Our experience does not coincide with this method; the why we will give in some subsequent issue.

Put away only average-sized, regular-shaped eggs. Unusually large and uneven-shaped ones are apt to be unfertile, or to produce malformed or defective chickens.—(*The Pet-stock Bulletin.*)

PIGEON HISTORY.

RESPECTING "WILTSHIRE RECTOR'S" queries as to the lost tribes, I am quite at one with him. I have often asked a very similar question as regards several Pigeons named in "Moore," 1735. But as regards the White Pouter I can corroborate Mr. Ure's statement, and I believe further illuminate at least that one dark page in the history of our beautiful pews; but before I render my explanation, and with all due respect and veneration to the devotees of that particular fancy, let me ask, Where did the Scotch first get their Pouter? Is its history so enshrouded in mystery as to be even beyond conjecture?

I was first "introduced" to society in a house in St. George's Street, Great Yarmouth, in the year 1834, and I should say the first live thing I ever had in my hand was a Pigeon. My greatest delight were my father's Pigeons from my very earliest infancy, and "Moore's" book with the pretty picture Pigeons in it. In that book Moore speaks of the Parisian Pouter. Who ever now hears the term? He also speaks of the Dutch Cropper, also of the Horseman, and those most in vogue in my young days were large rakish birds, in colour neither white, blue, nor grizzled, but a light bluish blue tick on a white ground, and the tail more inclining to slate colour.

The Dutch Cropper was invariably white, a short, thick, clumsy-looking bird with generally a bull eye, wide and crooked upon the "legs," which were a bit feathered. Some of the Yarmouth sailors were, and no doubt are now, fanciers, and they trading between that town and Rotterdam generally used to bring the Dutch Cropper over, a distance between the two shores of 120 miles. These birds paired with my above-described Horseman, frequently produced all white offspring, or else with a blue tail merely. Now, these birds were called Pouting Horsemen—like the Horseman at Hampton Court, with a horsehoe or crescent on its gullet. These birds were commonly larger than their Dutch parent, very merry and rakish, and when flying showed a bit of an oblong bow.

Norwich, celebrated for its silk, crape, velvet, &c., manufacturers, having Lynn as their operatives ever originally worked and instructed in the art, and many of them best of the "fancy," undoubtedly brought their pets with them. This much I know, that when it was thought desirable to improve the strain of a Pouting Horseman, or the Dutch Cropper either, my father and many others as well used to proceed to Norwich to select a bird suitable to their fancy and purpose, and

this said "lady" or gentleman as the case might be, invariably made to be the very paragon of what the Pouter proper now is. Is it not probable that the Scotch Fancy is the exact parallel to this? and may we not have eclipsed the Parisian Pouter by our own climatic and natural improvements? And may not this have been the secret of the Parisian perfection and former superiority, they being in the fancy before even Norwich, which was a city before Yarmouth was thought of. As to colours, Whites were never wanting even from my earliest recollection, and that dates further back considerably than 1842. I trust I have now done deep enough for our worthy and very respected correspondent, but I could widen my details. Who can tell me where are Moore's Uplonger, his Finnikin, Capuchin, Narrow-tailed Shaker, and Smiter?—POUTING HORSEMAN.

THE POLISH RABBIT.

The term "Polish" has been applied by the English rustic to a good number of varieties of Rabbits, including the Siberian, Angora, and the variety which has the best claim to the name, and which is the subject of this paper. The Polish proper is a pretty little animal that is easily described, although not always very easy to distinguish. The breed is and has been scarce in this country, and it is, in fact, apparently on the very verge of extinction. It is true that Rabbits somewhat resembling the breed in characteristics and appearance occasionally make an entry at our shows, but they generally lack the distinctive features that are indicative of purity of blood. It is exceedingly strange, but to any but a competent Rabbit-fancier the resemblance between the Polish and some of the common hutch Rabbits is so very close and confusing that one cannot be distinguished from the other. The variety is, however, a distinct one, and any person who has taken much interest in Rabbits and Rabbit-exhibiting will know that there is a "distinction with a difference," and hence worthy of notice. We have not much faith in the statements as to the localities from which Rabbits are extracted, but in this instance we believe that the Rabbit in question really comes from the country from which it takes its name. From Poland it has migrated into the various contiguous states, and is now to be found in many European countries, especially Russia and France; but, as already stated, it has not ever been much patronised in this country, and is not a very common pet in any part of the island.

The points are very simple and are very easily described, nor are there any questions of detail with reference to them in dispute as is the case with almost every variety of Rabbit. The Polish is a decidedly small variety, seldom exceeding 5 lbs. in weight when full grown, and being frequently under that weight, even when in good condition; 3 or 4 lbs. may be named as the average weight of the breed, so that we have an exceedingly small variety—as small and even smaller than the diminutive Dutch. The formation of the limbs is rather indicative of delicacy, the joints not being overstrong nor the limbs particularly prominent. The body is somewhat compact and stumpy; it is capable apparently of taking a considerable quantity of flesh. The legs are decidedly delicate and short, the animal standing very low, and being very often found in a reclining position as though it were rather a labour for it to stand. We have seen it stated that the Polish resembles in many respects the Himalaya. The simile is hardly a happy one. It is true that, deprive the Himalaya of its dark points, you will have an animal resembling the Polish in colour; but in other respects, so far from there being resemblance, there is a great dissimilarity in every point, the Himalaya being the very pattern and picture of health and hardness, while the Polish has in its every look the appearance of weakness and need of protection. We have said that, deprive the Himalaya of its black extremities and you have a Polish in colour, for the Polish is pure snow white from head to foot without one particle of dark of any sort. All albinos are weak and delicate, and not infrequently are they puny as well. The white racehorse is never seen to the fore, and the white cat is the most feeble and useless member of its tribe. There is something in the general look of the Polish Rabbit that takes the fancy and excites sympathy from a spectator. The eye is a very delicate pink. Red eyes are generally said to be the portion of white animals, but the real colour of the Polish eye is a delicate pink. Really the eye is quite colourless, but the veins are so very delicate that the blood can be seen coursing through them. The head is rather short and small generally. The ears are upright, but not so strong or firm as those of the Himalaya.

As already observed, pure white is the only admissible colour of this breed, any other being a sure sign of impurity; a single spot will go far to destroy its value. It will become apparent before the young have obtained the age of many weeks whether they will have a good coat; and the fur is really the only article of value, the breed being too small to assume any real value in the food market. The fur is not generally so long as that of the Lop or Silver-Grey, but rather resembles that of the Himalaya. It is very thick and fine, and of considerable value to furriers.

The Polish Rabbit is very prolific. Like its little cousin the Dutch, its fecundity is really astonishing; the litters are frequent, and from six to nine may be expected in each. The doe makes her nest in the darkest and snugest corner and watches her young with anxious and jealous care. She decidedly objects to any intrusion, being evidently more than usually suspicious. The young will want every care and attention to be expended on them, as they are by no means overstrong, but with care they may mostly be reared. They should not remain with the doe too long, or they will reduce the doe to a state of weakness before many weeks have elapsed.

In disposition the Polish Rabbit may be said to be extremely docile and quiet; in fact, it may sometimes give the appearance of being paralytic, but in fact too much so, as it does not possess the bold front so much to be admired in the Rabbit of another species, even though it be almost as diminutive as itself. It may be fairly described as being the pet of the fancy, not because it is exactly unhealthy, but because it is generally feeble and fragile.

The distinction and resemblance between this breed and the common prick-earred white Rabbit may be tabulated for the use of any fancier anxious to purchase a specimen of the breed, which, as I have already observed, are extremely rare. In the first place the fur of the Siberian is the softer and shorter of the two, and generally somewhat thicker. The eyes, too, is generally of a lighter shade. The head is generally a little smaller, the ear not quite so muscularly strong, the body more compact though generally well shaped, the legs shorter and weaker, and the general appearance more pleasing and attractive.—*GRÆ.*

CANARY BREEDING.

AFTER the great Show at the Crystal Palace, the next important move amongst Canary fanciers is the pulling-down of breeding partitions, bringing into operation whitewash and other brushes, cleaning-out old breeding-cages, which after being renovated are replaced all epic and span, and the sundry pairs of birds "put up" to breed. Then comes an anxious time to fanciers, some of whom rejoice whilst others are not over-sanguine with their four-months operations in bird-breeding, which may be considered to terminate at about the close of July. During that period there are many ups and downs—the latter in most cases predominating. From various causes otherwise than the fault of the parent birds, eggs become added—viz., from a continual prying curiosity, cold north-east winds which have a very great effect upon the eggs, and also the hens whilst sitting upon them, the alarming loss of food, or the running, &c. With a view of giving a hint, or so as to the manner of procedure of our forefathers, we extract a chapter from Mr. Hervieux's old bird work, referring more particularly to Canaries' eggs and how they may be known to be good.

"It is to be observed that almost all hen Canary birds differ from each other in laying. Some do not lay at all, and those are called barren hens. Others are such ill-breeders that they lay eggs but once or twice in a year; besides, after they have laid their first egg they often rest the next day, and do not lay the next egg till two or three days after. Others lay only three times, and are regular in each time of laying, having three eggs at every sitting without any day's intermission. There is a fourth sort which may be called common, being very numerous; they sit four times and every time lay four or five eggs; but they are not always regular in laying. There are still others that have more eggs than all those I have mentioned; they sit five times, and would do it oftener if they were permitted. Every time they lay six or seven eggs.* When this last sort of Canary birds feed well they are excellent, too much cannot be made of them, they are worth more than six others of the common sort. . . . I shall only take notice, that if you let them go on laying—that is till the moulting time, they will in a year lay thirty-five eggs at least.

"As for the knowing of the eggs it is easily learnt. Some say they know whether an egg is good the very moment the hen has laid it, before she has sat upon it, which is false. They weigh it in their hand and find it, as they say, somewhat heavier than another egg they suppose to be soddle, and upon this conceit they decide on the goodness of the egg. If a man were to lay a wager upon that trial only he would be as likely to lose as to win, because it is mere chance and not knowledge that determines. You may as well affirm that the eggs are good as soon as they come from the hen without having been sat upon.

"When you have some pairs of Canary birds from which you have found no added eggs to come, and other pairs on the contrary which have never produced any good eggs, you may

* In corroboration of what Mr. Hervieux states as to some hens laying so many eggs at one time, we know of many instances of seven eggs being deposited by a hen, and by a Belgian hen of all other breeds, in other cases we have heard of eight eggs having been laid. We could give the name of a breeder whose pair of Canaries reared seven fine healthy birds from one sitting.

be almost sure to win any wager you lay upon them; and those who shall happen to lay wagers with such curious persons will be fully persuaded that it is the weight they find in the eggs which makes them distinguished between the good and the bad, and yet you see they would be grossly mistaken. Do not, therefore, depend upon that gross way, which may often occasion you to throw away an egg you suppose to be added, which would have been good if sat upon. To avoid being deceived you must follow the common rule, which is to look upon the eggs when the hen has sat upon them six or seven days. Take the eggs then from under the hen and view them against a candle or the sun. If you perceive that those eggs are thick and grow heavy, it is a sign that the little ones are forming in them and that they are good; if, on the contrary, you find they continue as clear as they were the first day you gave them to the hen to sit upon it is a certain sign that they are added, and then, especially if you examine them the seventh day after the hen has sat on them, you may without any scruple throw them away, for they will only serve to tire the hen to no purpose.

"If you have several pairs of Canary birds where the hens have laid near about the same time you may take away the added eggs from every hen, and of three leave only two sitting, giving five or six eggs to an able strong hen, because very often some one of the little ones die in the shells and receives no nourishment, and by that means you bring the third hen, the eggs of which have been given to the other two, to fall to work about making another nest."—*GEO. J. BARNESBY.*

(To be continued.)

PROGRESS OF APIARIAN KNOWLEDGE.—No. 4.

THE disputes which have existed relative to hives have been of long standing, and are probably interminable. Some prefer hives of straw, others contend for the superiority of wood. Let every apiarian please himself. It matters absolutely nothing whether the one material or the other is selected, provided the hives are well made and well protected. I have used both, and been as successful with the one as with the other so far as relates to the production of honey and the well-being and comfort of the bees. I confess that appearances are generally in favour of straw hives. For snugness and picturesqueness they are unrivalled; at the same time wooden hives are equally good for honey and will last a lifetime, which cannot be said of straw hives. They have the advantage also of greater facility of construction and nicety of adaptation to the innumerable freaks of apiarian fancy. (This being so, I have discarded straw hives these many years from my own apiary.)

The question of straw or wood has nothing to do with the relative value of different methods of management. The most advanced apiarian of the day can work his system, whether of "fixism" or "mobiliism," equally well with the one as with the other. Given a perfectly constructed wooden hive, or a perfectly constructed straw hive, and he may adopt any size, shape, fashion, system, or method of working, and the result will be the same. I say therefore again, let every apiarian please himself. In saying this I apprehend no broken bones thus far, be shillelghs ever so plentiful in the "battis of the hives." But when we go a step further and attempt to discuss improvements in shape of hives, or as to whether "fixism" or "mobiliism" is the best principle of management, we get at once into the thick of the *mêlée*. However, one must make the best of it, and not shrink from the encounter. I have no hesitation in couching a lance in favour of "mobiliism" by which is meant the use of moveable bars or bar frames (whether in straw or wooden hives) by which the combs may be lifted out and replaced as pleasure without interfering with the active work of the hive or injuring the combs of honey or brood in any way whatever.

If you consider that in the old-fashioned hive there is no possibility of knowing even what is going on, much less of rectifying mischiefs that may be breeding in the interior of the stock without breaking up the combs, that consequently all is darkness and uncertainty, which was the state of things universally in Great Britain till within a comparatively recent period, it will be seen how great is the progress that has been made in this particular.

First of all bars were invented, regularly arranged in parallel rows under a moveable top board. This was a great improvement where guide combs were carefully affixed to the bars; for in this case, in most instances by the help of a little patience and ingenuity, every comb could be got at, examined, altered, renewed, or replaced, as well as transferred from one hive to another, and so generally speaking all the higher operations of bee management fell under the power and manipulation of the bee-master. Artificial swarming, by the help of such transposition of combs, became easy and simple, not to speak of the other infinite and more or less delicate and interesting operations common now in every scientifically managed apiary. This moveable bar was in use fifty or sixty years ago, as may be seen by reference to Dr. Bevan's book, but it did not become generally adopted for a quarter of a century later. It was soon found, however, that the simple bar was not perfect. There

were many practical difficulties to be overcome in the use of it, constantly varying in every hive. The combs adhering to the sides of the hive had to be cut away with much loss of honey and brood, and in so doing great confusion and interruption of the labours of the bees was occasioned, together with temptations to robbery by stranger bees, as the honey ran about with its attractive scent borne on the breeze. This led our lamented friend Mr. Woodbury to introduce the bar-framed hive which goes by his name. The bar-frame itself, I presume, was the invention of some foreign apiarist, whether German or American I cannot recollect. By means of it, every comb can be made to fit exactly, or with sufficient nicety, a given space. Moreover, the combs adhere to the sides of the frame instead of to the walls of the hive, and can be drawn up and down without pulling a single drop of honey or destroying the life of a single bee, whether grub or full-grown insect. It will be at once apparent that a power this simple invention puts into the hands of the intelligent bee-keeper. Every conceivable manipulation for the successful management of bees is hereby rendered easy and within reach of all. I cannot imagine how anybody who really has taken the trouble to examine the new hives which are constructed on this principle, not to speak of any who have honestly tried them, can be found to say a word for any other sort of hive, except only in behalf of the stupid, indolent, or incapably bee-keeper. I certainly endorse what your well-known correspondent, "D., Deal," says on the subject in a recent number of this Journal:—"No one can doubt that the wooden bar-frame hives are the hives of the future. . . . and we may hope that the almost invincible prejudice in favour of the old system may be overcome."

It is not within my present plan to enter into the merits of the various sorts of bar-framed hives which claim to be good, better, or best. I speak only of the principle, which I consider to be a very decided gain on the system of our fathers and forefathers. Generally speaking the simpler they are and the closer they adhere to the parallelogram shape, whether square or oblong, the better. It is most desirable that every bar frame used in an apiary should be of exactly the same length and depth, so that it may be slipped in or out of any hive; therefore I cannot believe that the hive of the future will be hexagonal or octagonal, although, of course, no one will deny that these hives, such as the bar-framed "Stewarton," are in shape best fitted for the economy of heat. But this one advantage is more than lost by the impossibility of making every bar fit every part of every hive. The "Carr-Stewarton," of course, does not suffer from this defect.

I have in my own apiary an almost perfect specimen of a bar-frame hive. It is of the Woodbury pattern, with double walls, reversible floor board, and top board in several pieces. It allows of the quiet examination of any one part of the hive at a time by a partial removal of the top board. The displacement and disturbance occasioned in the working of it are at a minimum. I bought it of Mr. Abbott of Fairlawn, who I believe has a decided improvement upon it, already adopted in his hives for use in the current year.—B. & W.

OUR LETTER BOX.

HEN SITTING ON UNFERTILE EGGS (*Ignoramus*).—The sitting of the hen will be the same whether the eggs be good or bad. At Easter time, with "holidays on the brain," we cannot help being cheerful. We say with the politicians of all ages, the men who are never so virtuous as when they are "out"—

"Time as the dial to the sun,
Although it be not shown upon."

There is no death till there has been life. The egg produced by the hen alone is a clear egg. It may be laid by a hen or pullet living on a desolate island where a cock has never been. Such an egg may be set upon for six months. It will remain clear to the end. There has been no life, and there must be death. For the eggs had lived and died, others had no life in them. Can you wonder? It has been difficult to live in the constant downpour even for human beings, can you wonder if the eggs suffered?

OBTAINING LARGE EGGS (M. D.).—If you were breeding for a fine shining black you would not choose a light and a dark pair, how then can you expect a large egg from a cross between a Dorking and Cochon? Both are good layers, they do not lay very large eggs. If we were breeding to ensure large eggs we should try for them by crossing Grey-Cour and Spanish. Both are non-sitters, and can therefore afford to lay larger eggs than others that have the honours of maternity. We are not in the habit of measuring eggs, nor can we form an opinion as to result from that process. We have known Spanish sets to weigh 4½ ozs., and we have known an average of 4 ozs. Your question will go far to reascendate the old question—viz., Should not eggs be sold rather by weight than by number?

CROSSING BRAHMAH WITH HODDAN (Camden Town).—You start with a mistake in crossing a Brahma and a Hoddan; you have a siter and non-sitter. The chickens will be good layers but doubtful sitters, and we believe the price will be put to the test. I would advise you to buy a Brahma that they will be in for a Hoddan.

PIGONS DISEASED (E. B. T.).—The acrobatic eruption would probably be cured by rubbing the place very gently with zinc ointment.

PIGONS GARDENERS' ENEMIES (*Ignoramus*).—However well fed they will pick off the leaves, &c., of garden crops.

INSURING GLASS (H. A.).—Apply to the Royal Farmers' Insurance Company, 3, Norfolk Street, Strand, London.

DRIVING BEES (B. G., Co. Down).—In driving bees it is necessary to blow some smoke from cotton rags amongst them, then turn the hive on its crown north up. Place an empty hive near the same size on and over it, and roll a tablecloth round the junction of the hives to keep in the bees. Then draw on the bottom hive for ten or fifteen minutes with your mouth. This drumming confounds the bees and causes them to run up into the empty hive. The thing is so simple that after you have done it once you will be able to teach others how to do it.

SIZE OF BOXES AS HIVES (*Lydian*).—Boxes 14, 15, or 16 inches wide and 12 inches deep will answer well for bees. Whatever the shape of boxes may be, the cubic space of each should range between 2500 and 3500 inches. The term "grocer boxes" include more than tea chests. A crown hole in each box about 3 inches wide should be cut out of the crown of each box for snoring before bees are put into it.

PROBABLE PRODUCE (T. Merkle).—Without seeing the hives it is impossible to say what you may expect from them this year. Give the bees a little warm spring three or four times a week for a month. This will encourage them to breed, and if they become stronger or more lively by the end of four weeks they will probably do well. The fact that you have seen some young drones thrown out of one of them is an unfavourable symptom. It is an indication that the queen has commenced laying drone eggs at an unduly season. The hive should be examined to ascertain if the queen is laying any but drone eggs. If the brood is all drone brood the queen is worthless. Mr. Pettigrew is increasing the number of his stocks this year, and therefore has none out present to sell.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 43" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.			IN THE DAY.			Rain.		
	Barom. at Sea Level.	Hygrometer.	Direction of Wind.	Shade Tem- perature.	Radiation Temperature.	In grass.			
March and April.	Inches.	Dry. Wet.	Temp. of Soil, 1 foot.	Max. Min.	In. deg.	On grass.	In. deg.		
We. 29	29.712	47.7	45.1	S.W.	42.5	55.6	39.6	35.7	0.248
Th. 30	29.703	49.7	45.7	S.W.	42.5	56.4	39.6	35.7	0.152
Fri. 30	29.691	50.9	47.5	N.W.	43.6	56.1	44.4	92.3	0.49
Sat. 31	29.123	44.1	49.5	N.W.	43.0	51.7	38.4	97.9	0.44
Mean. 1	29.025	47.8	46.9	N.W.	43.1	54.3	38.6	92.6	0.300
No. 1	29.123	46.4	44.4	N.W.	42.7	54.7	41.4	87.8	0.285
Tu. 5	29.468	49.2	49.4	E.	45.8	58.4	45.2	83.6	0.083
Means.	29.275	47.8	45.9		44.9	56.6	42.3	91.1	0.655

REMARKS.

29th.—Fine and bright all the forenoon; afternoon dull with showers; evening and night fine.

30th.—Showery till nearly noon, then bright for a short time; showery afternoon and evening.

31st.—Fine morning, &c., very pleasant day throughout.

1st.—Very fine early, but rather cloudy by 9 A.M.; pleasant day, but not as much so as the day before.

2nd.—Fine early, but rain before 9 A.M., and a showery day.

3rd.—Fair day, but looking very dull and rainlike at times.

4th.—Fine early, getting cloudy soon after 10, but bright for a short time in the middle of the day; then dull and rainy after 5 P.M.; very much warmer, especially towards the evening.

Not by any means a bright week, but notwithstanding the prevalence of cloud the air has been much more springlike, and the temperature in nearly all cases being 7° higher than last week.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 4.

As soon as the holidays are over we may expect to return to a more steady business, the sale of all classes of goods being very uncertain; in fact, the only article inquired after are good Grapes, which are now almost finished. We have seen one sample of early Grapes from pots, but scarcely worth sending to market unless any good late ones to be had.

FRUIT.

	s. d.	s. d.	s. d.	s. d.	s. d.	
Apples.....dozen	0	0	0	Nectarines.....dozen	0	0
Apricots.....dozen	0	0	0	Oranges.....dozen	0	13
Cherries.....bushel	0	0	0	Peaches.....dozen	0	0
Currants.....sieve	0	0	0	Parsnips.....dozen	0	0
Black.....dozen	0	0	0	Desert.....dozen	0	12
Figs.....dozen	0	0	0	Pine Apples.....lb.	2	0
Filberts.....lb.	0	6	0	Figs.....dozen	0	0
Gooseberries.....quar.	0	0	0	Raspberries.....lb.	0	0
Grapes, hothouse.....lb.	15	0	25	Strawberries.....doz.	6	1
Lemons.....dozen	6	10	0	Walnuts.....bushel	5	0
Melons.....each	0	0	0	ditto.....P	10	1

VEGETABLES.

	s. d.	s. d.	s. d.	s. d.	s. d.	
Artichokes.....dozen	0	10	0	Mushrooms.....pottle	1	8
Asparagus.....dozen	0	10	0	Mustard & Cress.....punnet	0	4
Beans, Kidney.....dozen	1	6	2	Onions.....bushel	0	0
Beet, Red.....dozen	1	6	0	Pickling.....quart	0	6
Broccoli.....bunch	0	6	0	Parsnips.....doz.	0	0
Brussels Sprouts.....sieve	0	4	0	Parsnips.....dozen	0	0
Cabbage.....dozen	1	2	0	Pens.....quart	6	10
Carrots.....bunch	0	4	0	Potatoes.....bushel	2	6
Cauliflower.....dozen	1	6	0	Raspberries.....doz.	0	6
Cauliflowers.....dozen	2	4	0	New.....lb.	0	1
Celery.....bunch	1	6	2	Radishes, doz.	bunches	1
Coleworts.....dozen	0	6	0	Rhubarb.....bunch	0	1
Cucumbers.....each	0	6	1	Salsify.....bunch	0	1
Endive.....dozen	1	2	0	Scorzoner.....bunch	1	0
Fennel.....dozen	0	6	0	Sea-kale.....bunch	0	6
Garlic.....lb.	0	6	0	Shallots.....lb.	0	6
Herbs.....bunch	0	8	0	Spinach.....bunch	2	6
Horseradish.....bunch	0	0	2	Tomatoes.....sieve	0	6
Lettuce.....dozen	0	2	2	Turnips.....bunch	0	6
Leeks.....bunch	0	4	0	Vegetable Marrows.....dozen	0	0

WEEKLY CALENDAR.

Day of Month Week.		APRIL 12—13, 1877.	Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
Day	Week		Day.	Night.	h. m.	h. m.	h. m.	h. m.	Days.	m. e.		
12	TH	Sale of Ferns and fine-foliated plants at Stevens' Sale (Microscopical Club at 8 P.M. (Rooms at 12.30.	56.0	36.6	4 31	6 49	4 54	5 41	26	0 44	102	
13	F	Royal Botanic Society at 8.45 P.M.	55.7	35.2	5 10	6 41	4 45	7 1	0	0 28	103	
14	S	2 SECOND SUNDAY AFTER EASTER.	57.2	36.2	4 47	6 8	5 58	4 59	8 22	1	0 13	104
15	SCN	Victoria Institute at 8 P.M.	58.1	37.8	4 7	6 6	6 54	5 16	9 45	2	after	105
16	M	Royal Horticultural Society—Exhibition of Covent Garden Commodities. Royal Botanic Society—Second Spring Show.	57.9	36.7	4 7	6 4	6 55	5 40	11 3	9	0 16	106
17	TU		58.0	35.9	4 39	6 1	6 27	6 16	morning	4	0 31	107
18	W		56.6	35.6	4 51	6 59	7 7	0 22	5	0 44	108	

From observations taken near London during forty-three years, the average day temperature of the week is 56.9°; and its night temperature 36.5°.

VINE CULTURE.

KNOWING that your space is valuable I do not propose writing a long history of where the Vine comes from, under what conditions it thrives best naturally, how it has been treated in this country in past ages, or the position it is likely to occupy in time to come; but I particularly wish to give a few practical suggestions on Vine-growing which may be of service to those who are desirous of securing a good crop of Grapes. To make what I have to say as easily understood as possible I will arrange my remarks under separate headings, beginning with

THINNING THE SHOOTS.—It is said that a prevailing error amongst amateur gardeners is an aversion to pruning trees and plants so closely as they should be pruned, and if this be true in cutting in the dormant wood it is none the less so in thinning growing shoots. In pruning Vines it is a common practice to leave two and sometimes three eyes to each spur. Good Grape-growers do this, but they are very particular in removing all the buds when they do start excepting one—the strongest and most fruitful. Many, however, allow every bud to grow into a shoot for the season, as may often be seen by two or three shoots clustering together. I can attribute this to nothing else but fear of doing harm by removing any of them, whereas the greatest harm occurs in allowing them to remain. It is a simple matter to prove this, and I would advise those who think differently to try it. One good shoot from each spur will produce more and better fruit than three or four shoots from the same base. It is well known that the greatest harm that can be done to any fruit tree is crowding the wood, and it is quite impossible to grow three or four shoots from one Vine bud without injuriously crowding them. Fine crops can only be secured by thoroughly ripening the wood; and although Vine wood may become brown in colour it will not ripen thoroughly under a mass of leaves. I have a houseful of old Black Hamburgs which I intend to make youthfully vigorous this season. They are showing from two to six buds from each spur. As soon as I can see which bud has the finest promise of a bunch all the others will be removed, and if the single shoot does not become very thick this year it will be sure to ripen well, and that will be worth a great deal next season.

STOPPING THE SHOOTS.—This is another matter which should never be neglected. It is a bad plan even when the shoots are well thinned to allow many of them to run many feet before they are stopped. This is just another way of overcrowding; but it is worse than that, because the shoots must be stopped some time, and when yards in length are removed from them at a time the consequence in loss of sap is serious. My plan—and one I find answers well—is to pinch every shoot two joints beyond the bunch, and this is done as soon as the shoot is sufficiently long to admit of doing this. The point thus early taken away is no thicker than a small o in the Journal,

and it is impossible for this to have any checking tendency. Those shoots bearing no fruit are stopped three or four joints from the main rod, and they are not allowed to grow further than this the whole season, as it serves no good purpose to let them do so.

TYING THE SHOOTS.—I have seen many shoots not tied until they were breaking their points against the glass, and others again are in too great haste to train them into their permanent places, and break them in consequence. There is no difficulty in tying shoots which grow in a right direction from the first, but those which go the opposite way from the wires have to be carefully dealt with, such shoots must be tied two or three times. At the first tying only incline them out of the direction they are going, next time bring them half-way to the wires, and finally at the third time fix them in the position they are to occupy.

THINNING THE BUNCHES.—All Vines in a healthy condition always produce many more bunches than are sufficient for a crop. Many shoots produce two bunches; the larger one is generally next the rod and the smaller one nearer the point. This small one should always be removed first, and this must be done all over the house, and if there are still too many cut away the poorest of those which remain. Vines of different strength will bear different crops in weight, but in the generality of cases it is safe to leave a bunch to every alternate shoot. Amateurs, as a rule, err in allowing too many bunches to remain on, and in nine cases out of ten this is the sole cause of the Grapes failing to come to perfection.

SYRINGING.—This is an operation which most amateurs like to try their hand at; but squirting morning, noon, and night keeps the leaves and surface of the border in an overdamp state, and nothing will produce mildew quicker than this. Syringe thoroughly, and have done with it for days or weeks together if no insects appear.

WATERING THE ROOTS.—Without abundance of moisture at the root no good will ever result from any amount of attention to every other particular. Some recommend about three waterings in the season where the border is well drained, but this is not nearly sufficient. Once a fortnight is not too often to saturate the roots when the Grapes are green, and watering should not be discontinued until the fruit is more than half ripe.—A KITCHEN GARDENER.

FLORIST FLOWERS RAISED FROM SEED.

CARNATION AND PICOTEE.—These are among the sweetest and most beautiful of flowers for cutting. Raised from seed the plants are more robust in habit, and very much more floriferous than from layers. In a good strain of seed as many as 75 per cent. of the seedlings will afford double flowers, many of them very novel and distinct in colour; for though seed may be had in collections as self, flake, bizarre, fancy with white ground, and the last three in yellow ground—viz., yellow flake, yellow bizarre, yellow fancy and self, yet it is not desirable to rely upon the colours specified being produced. Picotees (in collections) have white and yellow grounds both variously margined. Where

cut flowers are in demand a plot of ground devoted to seedling Carnations and Picotees will be found extremely useful in July, August, and September until frost; for seedling plants are not only floriferous but continuous-flowering.

Sow the seed in April, the earlier the better in cold districts, and place the pots or pans in a cold frame, keeping close until the seedlings appear, then admit air freely. The soil should be moderately rich and light turfy loam. Sow thinly, and cover the seed with fine soil about the eighth of an inch deep. Keep moist, but avoid making the soil sodden. If very wet the plants are liable to damp-off, or assume a stunted sickly appearance. The seedlings can hardly have too much air, but afford shelter from heavy rains and frost. A warm south border answers nearly as well for sowing the seed, covering lightly with fine soil, watering as required, and keeping a sharp look-out for slugs, which are very partial to the tender grass of Carnations.

Whether raised in frames or outdoors the seedlings should be lifted carefully when they have a pair of leaves beside the seed leaves, and be planted-out in 4-foot beds in rows 6 inches apart and 6 inches asunder, being careful not to bury the stem deeper than up to the seed leaves, watering and shading from bright sun for a few days until the plants are established. Keep clear of weeds, and sprinkle soot about the plants, it being not only a good manure but one of the best antidotes to slugs and grubs. In winter a mulching of cocoa-nut refuse or partially decayed leaves will do good, and protection in severe weather by mats supported with hoops over the beds is serviceable. The plants, however, are very hardy and will do without protection. At the close of March or early in April every other plant and row may be removed, which as the plants are in 4-foot beds the two outside rows 6 inches from the side of the alley, will leave four rows in a bed a foot apart, and that distance I recommend the plants removed to be planted. Attend duly with water if the weather be dry, and keep clear of weeds as before.

The soil should be if possible a medium-textured loam, manured and deeply dug in the autumn, the ground being as well prepared as for vegetable crops. I mention this as beds and borders for flowers rarely receive the attention in digging, trenching, and manuring that is necessary. The flower borders may have a little manure occasionally, or some rich compost now and then, but it is the exception rather than the rule. There is nothing sweetens land so much as forking it over during dry frosty mornings. There are few plants that do not like lime, and Carnations are no exception; indeed, the Dianthus family generally prefer a calcareous soil. A dressing of old mortar rubbish is good, but as this is not always procurable, a dressing of quicklime early in March is beneficial; a peck per rod will answer for destroying slugs and worms, pointing it in with a fork, but if the ground has not recently been limed double the quantity may be applied.

When the flower stems rise place stakes to them in good time, securing the shoots to them loosely so as to keep them erect, yet without being so tight as to cause them to "knee" or bend, which will be very prolific of broken stems. Water may be given in dry weather, and weak liquid manure, but unless the soil be poor and shallow the plants will grow vigorously enough without it. The pods or flower buds of seedlings are just as liable to burst on one side as those of named varieties. This allows the petals to fall on the split side, not only causing the flower to be one-sided, but to have a very loose ragged appearance—very paltry indeed as compared with a flower of the same kind secured against such a misfortune. Nothing answers so well in preventing splitting as indiarubber bands, which may be purchased at a cheap rate from most stationers. They are expeditiously applied, and being elastic allow the buds to swell—unlike mat or cotton ties, which are injurious. In dry hot weather weak liquid manure may be given twice a week if necessary.

After flowering trim off the flower stems, stir the surface around the plants, give a light mulch of moderately rich compost, sprinkle with soot, which will kill or drive away slugs, &c., and in the coming season you may calculate upon a great quantity of bloom, after which clear away the plants, but any that are superior may be continued by layers or pipings.

PINKS.—Flowering earlier than Carnations, the seed, if the plants are to be flowered the second year, must be sown early in March, but it may be sown in April. Treat in the same way as Carnations either by sowing in frames or outdoors. The seedlings appear more quickly if the seed pans are placed in heat, but unless carefully watered and well ventilated damp-

ing-off is very usual. The plants are pricked out so soon as they can well be handled, or in June, in rows 4½ inches apart, and the same between the plants, and in September every other row and plant are lifted and planted in 4-foot beds, five rows in a bed, the rows and plants 9 inches apart. In other respects they have the treatment of Carnations for seed.

Though I mention Pinks, the raising of them from seed is not at all satisfactory, for there is such a great percentage of singles. If there be any flower seed in which improvement is needed it is in Pinks. Nevertheless it is very interesting raising Pinks even from seed; by selecting the best flowers for seeding it is wonderful what a great advance a few years' careful selection of seed effects.—G. ARNEY.

GUMMING OF FRUIT TREES.

I AM pleased to see that Mr. Luckhurst gives some attention to the above subject, for it is one in which I am deeply interested, and it is not likely to be worn threadbare in our day. I have before written a little on the topic and thought a good deal, and Mr. Luckhurst will pardon me when I tell him that the conclusions I have arrived at are not quite in harmony with his own. I am thoroughly convinced that gumming does "proceed from some internal disorders, some derangement of the system," but I do not admit that it is "consequently incurable." I need to think, and probably may have expressed as much in print, that it was caused by external injuries, and of course I know that the sap does exude from the injured parts, but I have come to the conclusion that we must look deeper for the primary cause.

Gumming is simply a casting-off an excess of sap on the part of a plant when its roots have been too greedy and have supplied more than its leaves can elaborate. The exudation is beneficial rather than injurious, and may even save the life of a plant, but I do not advise its being brought about by means of a hammer any more than a physician would recommend a patient to be bled by a similar process. If a plant is known to be in such a condition but it would gum seriously were its bark injured, it is undoubtedly a good plan to revert to the old practice of making a slit up the bark with a sharp knife; the excessive sap will then be exuded and the wounds will heal perfectly. A slit or two through and outside a bruised part will also greatly relieve it.

As a rule trees do not gum seriously when grown indoors and attended to by skillful hands; either do they commence to gum outdoors when they are in vigorous health and are provided with ample foliage. Even though they do get a touch from a hammer the result is not serious under such conditions; but the slightest injury to the bark of an outdoor Peach tree in February or March is almost certain to be followed by gumming, and the more vigorous the stock the greater the liability to suffer.

Shifting a Peach tree in autumn, if done carefully, tends to prevent gumming; I also think that root-pruning will have the same effect, but I am experimenting on this point. I have asked before in your columns for information concerning the liability to gum of Peaches on Peach roots; I mean to examine the subject for myself, but this will take time. At present I am of opinion that the gumming of Peach trees is principally the effect of their being grown on roots which are comparatively hardy, starting into growth early and vigorously, and consequently providing a supply which, before the Peach has any full-grown leaves, is beyond its capacity to elaborate. Ungenial weather, too, preventing the development of healthy foliage, and rich soil stimulating the already over-vigorous roots, are generally connected.

I do not wait now for my trees to gum before applying a remedy, but make an incision during the month of March up the stem of all young outdoor Peaches which have not been shifted, and (must I own it?) I have even been guilty more than once of allowing just one or two suckers to grow up from the roots till near midsummer.—W. TAYLOR.

AURICULAS—SELF ALPINES AND ALPINE SELFS.

MR. HORNER, whose words on the Auricula are so genial and so weighty, recently, in a discussion on the subject, said, "If self Alpines, why not Alpine selfs?" and "Nemo" in your issue of the 29th ult., page 234, says, "If self Alpines are to be tolerated, Alpine selfs will naturally follow," and asks, "Is not a greater variety gained thereby?" There is, I think, a little misapprehension here. The shaded colour which is re-

garded by florists as the especial characteristic of the Alpine is effective, as it contrasts with a golden ground, and its effectiveness is impaired as the ground pales successively to lemon or creamy custard white. To a white ground a shaded colour imparts perversity—a quite sufficient reason why there may be no Alpine self; though, speaking from my remembrance of some five years since, I believe to those who will tolerate Alpines at all (many *Auricula* growers refuse to do this) a goodly number of self Alpines will be most acceptable. Let us leave this question to be determined by the events of the 24th.—E. S. DODWELL.

EXHIBITING—LARGE VERSUS SMALL PLANTS.

Your correspondent "F. R. H. S." has on page 248 directed attention to an important subject, and one not easy to discuss. No doubt the "principles of temptation," as your correspondent calls it, is an unsound principle; and "appeals to mere cupidity" are not "morally educational" in their tendency; yet, on the other hand, small prizes will never command support, except from those who in another manner can secure some recompense for the expense incurred in bringing plants to an exhibition. This nurserymen can do, and they are justified in doing it; but private gardeners cannot, for they have no plants to sell, and have in most cases their own expenses and the travelling costs of their employers' plants to pay to and from an exhibition, and substantial prizes therefore become necessary to induce, or, to use a more appropriate term, to warrant exhibitors conveying their plants any considerable distance; but that is no sufficient reason that the prizes be, as a leading exhibitor recently said, "wildly extravagant."

As one who has had a fair share of exhibiting I am bound to admit that "big" prizes are regarded favourably by many exhibitors; but there is another matter of as great, if not greater, moment to them, and that is the prompt payment of prize money. I am quite convinced that if the prize money was sent to the successful competitor immediately after the exhibition, that that promptitude would compensate for larger amounts long deferred. I mean that reasonable prizes promptly paid would be more valued than extravagantly large honours withheld for an extravagantly long time.

When the present directorate of the Royal Horticultural Society decided to dispense the awards with promptitude they at once secured the sympathy of exhibitors, and now the Society has no difficulty in providing superior exhibitions when previously they could scarcely provide exhibitions at all. The Royal Botanic Society might advantageously adopt a more expeditious "settling" policy; for although the long-deferred system of payment is tolerated, it is still not liked by some who exhibit, and others there are who will not compete under such a lethargic-payment policy.

Before condemning big plants and big prizes as such, we must remember that it has been the large well-cultivated plants which in years gone by have been staged at our great exhibitions that aroused a spirit of emulation amongst cultivators, and placed the practical horticulturists of Britain in the high position that they are universally admitted to occupy. Keen competition has been the great stimulator in plant-cultivation, and large plants have rendered our shows so eminently successful. Still, large plants are not everything, and even the hobbyhorses of exhibiting may be ridden too hard.

If the large specimens stimulate on the one hand they sometimes deter on the other. Gentlemen are not numerous who will purchase plants and be content to wait half a dozen years before the plants are considered worthy of winning a prize. Such patience on the part of owners of gardens might have been the case once, but it is not fashionable now to wait long for results; moreover, where there is one gentleman whose object is the growing of plants for public exhibition there are ten who refuse to exhibit at all, but who will yet patronise and support exhibitions on the supposition that they give an impetus to superior cultivation and render gardeners more proficient in their duties in producing superior examples of culture for private decoration; comparatively small and well-cultivated plants are therefore more generally acceptable than large specimens, yet the smaller plants, however skilfully they may be grown, have little or no chance of recognition at public exhibitions. In my opinion more discretion should be left to the judges, who should have power to award prizes to any number of plants, large or small, which are submitted to them and which are worthy of recognition. There must be

probably the "sixes" and "twelves" as usual; but there are more good plants in the country outside the pale of these stipulated numbers—these packed groups—than in them; yet those plants are left at home because there is "no class" for them, and of course no prize.

Means should be afforded for enabling flower-show judges to reward merit regardless of the mere size of plants and arbitrary numbers. Prizes should also be provided more freely for "arrangement for effect"—groups which would admit of many more exhibitors competing and render the exhibitions additionally attractive. Possibly the "new" show at South Kensington next week will be suggestive, as no teaching is so good as example, and I am confident that that show will prove that comparatively small plants are yet meritorious.—EXHIBITOR.

BEAUTY OF GLAZENWOOD ROSE.

As there has been some discussion in your columns as to the identity of this Rose, perhaps a few lines from me may aid in dispelling some of the perplexity now rife.

In the first place I enclose you my original painting from the Rose. This you are at liberty to report upon in your columns, or place before the next meeting of the Floral Committee of the Royal Horticultural Society, or do anything you like with. The drawing has been recently seen by Mr. George Paul, who, the moment he saw it, pronounced it to be no other than Fortune's Yellow.

The drawing represents the Rose exactly as I received it from Mr. Woodthorpe, and no other drawing was made by me. This drawing was sent to the publishers of the plates, and if the plates were afterwards manipulated the alteration was no work of mine. I know nothing about the plates.

I think you will agree with me that my picture represents a Rose with yellow petals inclined to buff, irregularly striped with carmine in the bud state, and obscurely striped with blue in the full-blown flower. As to "orange ground," "irregular flakes of vermilion," "golden ground," &c., these terms are foreign to me. I know nothing about them. In my original description I state the Rose (on Mr. Woodthorpe's authority) to be a Briar Rose with numerous thorns, and believed to be a variety from Japan. As to the foliage—I say "the foliage is not large."

In figuring new plants an artist necessarily depends upon the good faith of the raiser or introducer of the plant, and as a rule I have seldom or never been led much astray, and I have no reason to doubt Mr. Woodthorpe's good faith in this matter.

The striping may possibly be accidental and not permanent, and I specially said in my description that the blooms figured were the first that had been produced. Rosarians will remember several striped Roses, as *Triomphe d'Amiens* and others; but I believe the striping is in no case permanent.

Your correspondent "ROSIAN" says, p. 228, "I have not seen the plate in the English periodical, but I have in the Belgian publication ('*Flore des Serres*'), and it is significant that the then Editor, the late accomplished Louis Van Houtte, was careful to place the responsibility in regard to the illustration on the English owners of the Rose and the paper in which it was first portrayed." I can only say I wish my late friend and correspondent Louis Van Houtte had always been equally careful to acknowledge the sources from which he derived his plates, for anyone who is well acquainted with English and foreign plates well knows that Van Houtte was in the constant habit of reproducing any good plate in *fac-simile* without any acknowledgment whatever. Although constantly remonstrated with, both by letter and in print, Van Houtte would seldom or never acknowledge his *fac-simile* copies from my work and that of Mr. Fitch in the "*Botanical Magazine*." *Glazenwood Beauty* being a little doubtful to Van Houtte he made an exception to his rule for once, and acknowledged his plate to be a copy.—W. G. SMITH.

ROOTING PINE SUCKERS.

I HAVE often heard it said by Pine-growers that it is most difficult, if not impossible, to root Pine-suckers later in autumn than August or September. I have put in suckers in both of these months and found them to do well; but from circumstances over which I had no control I did not put a sucker in last autumn until the first week in December. I took a large batch of Queen and Black Jamaica suckers from the old plants,

then potted them singly in 6-inch pots, and plunged them in leaves heated with pipes from underneath. A few days ago I shifted the plants all into their fruiting-sized pots (10 and 12-inch pots). I have potted many young Pines, but I never handled any better rooted—every ball being literally crammed with white, strong, healthy young roots. The soil was moderately moist when they were potted rootless, and not one of them received a drop of water at the root all the time they were in their sucker pots. When the suckers are potted early and not shifted into their fruiting pots until now, the roots are generally in a very tangled state, and they do not grow so well as those which are not given time to become matted round the pots.—PRACTITIONER.

TRITELEIA UNIFLORA.

To all lovers of spring flowers, or to those who have to provide a miscellaneous display of flowers for rooms or for a conservatory, this is a plant well worthy of extensive cultivation. It is a hardy Liliaceous bulb, introduced from North America in 1830. Its habit is dwarf. The flowers are white with a tinge of pale blue, and are produced on stalks from 6 inches to a foot in length.

If several bulbs are grown together in a pot a very desirable effect is produced. The only objection against the use of this plant in rooms is that when the leaves are bruised they have a faint smell of onions.

The cultivation is very simple. The three primary points to be attended to are affording plenty of water to the plant when growing, a thorough resting period, and abundance of air. About the middle of August is the best time to pot the bulbs, placing about twelve in a 5-inch pot, using a compost of loam three parts, and leaf soil, with a little silver sand, covering the bulbs with about an inch of soil. The drainage must also be efficient. When potted place them on a bed of ashes outdoors, keeping the soil moist till the plants make their appearance, when they must be watered more liberally. They need slight protection during the winter—about the same as is usually afforded to Camellia plants in frames. A few degrees of frost will do no harm, for I have often had the Tritelia pots frozen hard for a week or more, which has not affected the foliage or interfered with the flowering of the plants; keeping them close, or using fire heat, is not so good for them as more hardy treatment.

About the middle of February they commence showing flowers, which last well in a cool light greenhouse until April. After their beauty is past the plants should be placed outdoors in the sun and kept watered to perfect their growth; and when the foliage turns yellow the pots may be laid on their sides and kept dry till August, when they should be looked over and some of the surface soil scraped off and about half an inch of fresh compost put on as a top-dressing, and be treated the same as above stated, with this exception, that they will require a few doses of liquid manure. It may be asked, Why not shake out and re-pot every year? but after eight years' experience of the cultivation of this plant I have found that a larger quantity of bloom can be had the second year after potting than the first, and the quality as good; but if left in the pots till the third year the bulbs will have increased so much and the soil be so exhausted that they will scarcely bloom at all. That is the reason I find every alternate year the best for repotting, selecting, of course, the best bulbs, and potting the smaller bulbs by themselves if wanted.

As a proof of the utility of Tritelias for cutting to mix with other flowers, I may state that each 5-inch pot produced upwards of fifty blooms the second season after potting; the grass-like foliage is also very graceful, hanging down and completely hiding the pot. For these reasons I recommend the culture of this pretty and useful old plant to the readers of this Journal.—A. HARDING.

APPLE CULTURE.

I HAVE read "W. G.'s" interesting remarks on this subject. I have no Apples on the Paradise stock, otherwise I should have been pleased to communicate results, but there are a few points on which I have something to say.

He writes: "I have a large portion of my orchard occupied with sorts I do not require and never ordered. How this evil is to be avoided by purchasers I do not know, as it is often years before the mistake is discovered." I expect this will be found to be a general subject of complaint, and that few people

have planted Apples extensively without finding some wrongly named, particularly when they come from two or three places. I think it arises from the perishable nature of labels, and sometimes from the want of sufficient care on the grafter's part, and a mistake once made is liable to be extended.

A nurseryman told me the other day that he ran short of one kind of Apple and sent to another nursery for it, and a wrong kind was sent. He went on grafting and budding away for two or three years and sending trees all over the country before he found out the mistake. He is more careful now, and so he ought to be.

Perhaps a nurseryman ought not to graft from a tree until he has fruited it. Purchasers would be able to avoid the evil of getting wrong sorts to a great extent if they paid a visit to the nursery in summer when the trees were growing. Some of them would have fruit on and could be easily identified, and an experienced man would be able to identify others from the leaves and mode of growth, and they might be marked at once for removal in the following autumn.

I will pass on to the latter part of "W. G.'s" remarks: "Could not something be done to encourage planting fruit trees?" Yes, a great deal may be done. The Editors are doing something now by getting up an Apple election. I have sent a list and am promised two others, one from the vale of Gloucester and the other from Worcestershire, and I believe more are required from other parts of the country. It is a great encouragement to the fruit-grower when he plants sorts which thrive and do well, and much disappointment has arisen at various times from sorts being planted which are too delicate for the situation. Some kinds, like Lord Suffield, may soon be brought into bearing, and pyramids or bushes of that sort ought to be planted in every cottager's garden, but the uncertainty of tenure is after all the great drawback to fruit cultivation in this country. What is wanted is an alteration in the law. It is not much encouragement to plant trees like Blenheim Orange and wait several years, and then to leave the place and be obliged to let the trees remain for other people to reap the benefit. A short Act of Parliament ought to be introduced for the purpose of promoting the growth of fruit trees, and one of its provisions ought to be to the effect that "on or after the 1st of January, 1878, any person or persons planting a fruit tree in a garden rented by him of another shall, on the expiration or other determination of such tenancy, be allowed to remove the same. A second clause might be added to the effect that the tenant should, with regard to trees nailed or trained to any dwelling-house or walls, first of all offer them to his landlord at a valuation to be made in the usual manner, and in the event of the said landlord declining the offer then the tenant should be allowed to remove them. I do not see that an Act of this kind would be an injustice to anyone; it would only apply to gardens, and they are, of course, intended partly for the growth of fruit already.

Something of this kind will be sure to come into force at no distant period, and I will suppose that it has been obtained during the present sitting of Parliament, and that some well-disposed person or persons have taken a leaf out of the plan that is sometimes followed in France with regard to rural affairs, and posted a few notices in the villages something like the following:—"Notice.—Whereas by an Act of Parliament passed in the fortieth year of Her Majesty's reign, entitled 'An Act for the better encouragement of the Growth of Fruit Trees,' every person who after this date plants a fruit tree in his garden will be allowed to remove the same at the end of his tenancy. We beg to call the attention of persons desirous of planting fruit trees to this fact, and to say that the Apples which thrive well and are most likely to succeed in your district are Keswick Codlin, Hawthornden, Lord Suffield, Stirling Castle, Rymer, &c."

The effect of a notice like this would be astonishing; there would be such a demand for Apple trees that nurserymen would hardly be able to keep up the supply, and there would be an impetus given to fruit-growing that has not occurred before in this generation.—AMATEUR, Cirencester.

It is very singular that my experience is exactly the reverse of "W. G.'s." Blenheim Pippin he has fourteen years old, from which he has had one large specimen. I have had it as a standard during eight years, and have had several fair crops. As a pyramid I have had only a very few Apples on it. Of Winter Pearmain, again, "W. G." obtains only a very few. I have a standard eight years planted which bears capital crops. He says Cox's Orange Pippin makes a good pyramid and is a

great bearer, but with me, though a good pyramid, it is no bearer in eight years. Scarlet Nonpareil, "W. G." says, is an abundant bearer, but with me during eight years it has produced not a dozen Apples, I think, but it is a capital tree. With me the standards come into bearing quicker than the pyramids; in fact, except some few sorts, Apples on the Paradise stock do not seem to fruit so well as I expected from statements in the catalogues, but I find the Pears succeed very much better. This year there is a most abundant promise on almost every tree, and I have had some capital crops off before.

All my trees I have been speaking of have been planted about the same time. Standard Apples planted three or four years beat the pyramids for fruiting which have been planted twice as long.—G. C.

[Our correspondent should have stated the nature of the soil of his garden.]

I QUIN agree with your correspondent who, on page 254, complains of the want of precise information in many articles written for the benefit of others. I have long noticed this neglect, particularly among those who have written so much for the pages of the Journal that we are supposed to know where they write from. But I was surprised when I read, in reference to my article on Apple culture—"Where does 'W. G.' live? On what soil?" If your correspondent will again turn to the article in question he will find it there stated that I live in a southern county, and that the soil of my garden is a deep sandy loam. To be more precise I will say that my garden slopes to the east, that my crops are late, and that I seldom ripen any Pears except the early sorts.

Your correspondent also says, "What is the use of being told of his having a good middle-of-July Apple? No one can get it. It is just the Apple I want." I have no desire whatever to keep this variety to myself, and shall be happy to send the writer some of the shoots in the budding season, so that he may have an opportunity of trying the sort himself. I also hope—frogs permitting—to be able to send in July a dish of this variety to our pomological authorities.

When first planted my tree was very liable to canker, but for the last four years it has been quite healthy. It is a very heavy cropper, the fruit growing sometimes three and four in a bunch. In 1874 I found it necessary to thin away two-thirds of the crop. I do not know the origin of this variety, but believe it came from Norfolk.—W. G.

[There are four varieties of desert Apple that ripen in July and early August—namely, Jonangett, Margaret, Early Harvest, and Sack-and-Sugar.—Eds.]

AURICULAS AND THE AMERICAN BLIGHT.

THERE is evidently some mystery as to the new attack to which the Auricula has been subjected, and its importance may be a sufficient apology for my alluding to it again. I have already mentioned that the first specimen I sent to Mr. W. G. Smith he concluded to be the mycelium of some fungus, but on my sending a larger piece of root he pronounced it to be the American blight or some similar species. I then forwarded another root to Mr. Andrew Murray, the Secretary of the Scientific Committee of the Royal Horticultural Society, and his reply was, "The mycelium-looking substance is certainly not the Apple blight. It is not it in structure, nor in mode of growth, nor in locality, nor insect is visible. To me it looks so fungoid that, notwithstanding the high authority of Mr. Worthington Smith, I cannot help thinking some accidental error has misled him. I have handed it to Mr. Cooke to get his opinion." At the meeting of the Scientific Committee Mr. Cooke gave his opinion as follows—"The Auricula left me for examination was, at the base of the leaves close to the soil, surrounded by a snow-white flocculent matter which bore some remote resemblance to the American blight. Neither on the leaves nor on the root-fibrils could I find the slightest trace of any insect. The white flocculent substance contained a few thin hyaline filaments which might belong to some common Penicillium. The mass of substance was partly crystalline and partly amorphous. Being of opinion that the greater portion of this substance was inorganic, I removed as much as I could on the point of a knife and placed it in a clean concave cell excavated in a slip of glass, and filled up the cell with alcohol. At once the whole mass disappeared to the naked eye, being dissolved in the spirit, and I covered with

thin glass, and in a few minutes examined with the microscope. A very few grains of sand and two or three fragments of hyaline tubes like those of Penicillium remained; but as the spirit evaporated stars of acicular crystals around the margin followed its retreat to the centre, until the whole field was covered with stellate crystals of great length and delicacy. I do not presume to draw any conclusion from this, which is clearly a chemical question. I found no insects and no parasitic fungus except a characteristic Cladosporium in olive patches on a decaying leaf."

I afterwards sent to Mr. Murray sections of the stem of another diseased plant which looked to me as if it had been punctured by an insect, and he says, "They remind me very much of what I have seen on a large scale in full-grown plantations of Scotch Fir when the roots got into bad undrained subsoil: first morbid growth of the roots, then rotting-off of the fibrils, then discoloration of the wood in the trunk, sometimes excessive exudation of the sap, shortening of the leaves, &c. You have the morbid growth of the roots, the rotting of the fibrils, the degeneration of the tissues in the stem, the exudation of primuline, and the feeble growth of the leaves. What have you been doing to the roots? would be my question." Now, in reply to this, I have only to say that all my Auriculas were carefully potted and drained, as I have ever done them; I need the same soil I did last year when they were so fine; and that there is no lack of vigour in those plants which have not been attacked. I feel therefore as much at sea as ever. May I say again that the experience of your correspondents would be very acceptable? And I am sure if Mr. Llewelyn would forward a specimen of his diseased plants to Andrew Murray, Esq., 67, Bedford Gardens, London, W., he would be greatly obliged.—D., Deal.

NOTES AND GLEANINGS.

WE are authorised to state that HER MAJESTY THE QUEEN will visit the Royal Horticultural Gardens at South Kensington on the 2nd of May, and that the flower show which is announced for the 1st will be held on the 2nd. We have no doubt that the exhibitors who usually show at the meetings of the Society will on this occasion make it worthy of Her Majesty's visit.

THE change of the days of meeting of the ROYAL HORTICULTURAL SOCIETY from Wednesdays to Tuesdays cannot fail to be a great convenience to both exhibitors and visitors, and it must also be of advantage to horticulture generally. The fixtures of the shows and meetings at South Kensington and Regent's Park could only be regarded by the horticultural public as suggestive of antagonistic rivalry between the two Societies, and such a feeling ought not to be suspected even. The aims of the two Societies are identical, and, instead of one weakening the other, they should as far as possible support each other in the promotion of horticulture. As was so well and fairly stated in our columns last week by Mr. Douglas, the concurrent fixture was the result of accident in a great measure, and blame of either Society is out of the question. The remedy has not been more promptly applied by the Royal Horticultural Society than the grievance demanded. The change of days will commence on the 15th of May.

THE usual monthly dinner of the HORTICULTURAL CLUB took place on the 4th inst., and there was a good attendance. Mr. Cant of Colchester sent some dishes for the desert of the Essex Spice Apple in capital order. It is a most delicious late Apple and very free bearing. A vote of thanks was given to Mr. Cant for his courtesy.

WE learn that the large-flowered and fine AZALEA DUKE OF EDINBURGH raised by Mr. PARSONS of Welwyn will be distributed by Mr. B. S. Williams. The flowers of this Azalea are not more remarkable from their great size than from their extremely stout texture, the petals being almost wax-like in their consistency, and are smooth and well formed. The colour appears to be rosy crimson, and when in a cut state, as we saw the flowers, they almost resemble Dipladenias. Mr. Williams now possesses the largest and smallest-flowered Azaleas extant, the new varieties of A. amona being largely increased to meet the demand that is sure to be created for them when their merits become fully known.

— In addition to the gentlemen already named, the following have accepted the office of local Hon. Secretaries of the

NATIONAL ROSE SOCIETY:—Captain Carter, for Horsham and West Sussex; J. L. Curtis, Esq., Chatteris and neighbourhood; and — Cheales, Esq., for Tring and neighbourhood.

— MR. S. KIRKHAM, gardener at The Beeches, Newcaste, Staffordshire, writes to us that—"To gardeners who have a demand made upon them for CUT FLOWERS all the year round a few varieties of Geraniums suitable for forcing are of great value, as they supply colours not to be found in any other class of plants. Before all others he thinks the palm ought to be given to Lord Macanlay, a variety with brilliant crimson flowers and a good sturdy habit. Colonel Holden, E. J. Lowe, Crimson King, and Amaranth are also excellent; the last-named is a beautiful pink shaded with purple."

— AMONGST the earliest and most attractive of deciduous flowering shrubs are the Almonds or Pesches. The blossoms are mostly of a delicate colour peculiar to themselves. But a very distinct variety is the CRIMSON-FLOWERING PEACH, which Messrs. Veitch have found very valuable for forcing for decorative purposes. The blossoms of this variety are large, double, and of a glowing crimson colour: well-blossomed trees large or small cannot fail to produce a rich effect in both conservatories and shrubberies during the spring months. It is a tree not to be overlooked by those desiring to have the richest and the earliest of "spring blossoms."

— A NOTEWORTHY and very valuable consignment of Orchids has just been received by Mr. Bull in excellent condition. The bulk of the importation consists of many thousands of the usually costly and extremely beautiful Cymbidium ebennum. This Orchid is considered by Mr. Denning to produce the "most beautiful flowers in creation." Some excellent Orchids are now flowering with Mr. Bull, especially some fine varieties of Lycate Skinner. A hundred plants of *Odontoglossum vexillarium* are almost all showing spikes, and will shortly be highly attractive.

— A SPECIMEN of *JACARANDA MINOSIFOLIA*, or Rosewood of Brazil, over 20 feet high, is the great attraction in its flowering season in the Sydney Botanic Gardens. Its foliage, of a Fern-like appearance, is exquisitely graceful, while in the blooming season the flowers, of a delicate blue, are so abundant as to completely cover the tree, making it from a distance appear as a mass of cerulean grandeur. This and *Cupania filicifolia* are two of our most elegant table decorative plants. We observed a large number of them the other day in a cool stove in Mr. Williams's nursery at Holloway, and were informed that they were in great demand for decorative purposes. Few plants have foliage more graceful and Fern-like than these.

— THE President of the Vine-growing Society of the Pyrenees Orientales has, says *Nature*, sent a document to Paris Academy of Sciences, affirming that "it is the American plants which have brought the *PHYLOXERA* INTO FRANCE, and that each plantation of them is the signal for a fresh invasion." This statement directly controverts the theory which has been more than once propounded, that American Vines are phylloxera-proof. Perhaps our American friends will embrace the opportunity of "commenting on" the bold assertion of the Frenchman.

— *MIMULUS MOSCHATUS* HARRISONI, a hybrid between the large spotted Mimulus and the Giant Musk, is a noticeable plant, and is likely to become popular. The flowers are as large as the former, with the rich golden yellow colour and delicate odour of the latter, exquisitely spotted on the lower segments with rich brown. Its habit is recumbent and nest, blooming at every joint, thus producing an abundance of flowers. A few plants will effectually brighten and scent a conservatory or greenhouse. It will succeed in all situations where it can be freely supplied with moisture, although a cool shady place is the best. It is an excellent bedding plant, and especially adapted for rockwork.

— A SHORT time ago we directed attention to the great strength of some squares of TONGUED GLASS which had been submitted to us. The glass was about the thickness of ordinary 16-oz. glass, and was only broken by submitting it to a test more extreme than it would ever be likely to be subjected to if affixed on the roof of a greenhouse. Considering, however, that further experiments were necessary for proving the practically useful qualities of the glass we submitted a portion to a glazier, requesting him to cut it with a diamond. We are informed that "it is impossible to cut the glass after it is toughened." It is right that this should be known, because special care must necessarily be taken in having the sashes

made exactly of the size of the squares when the new glass is proposed to be employed. In consequence of the injury resulting from hailstorms last year "toughened glass" was recommended as a means of future security; but from "information we have received" we advise its use on a small scale at the first, in order to test its durability under the heat of the sun, and also whether the foliage of plants and Vines is as safe from injury from scorching as is the case with ordinary glass.

— WE learn that there is every probability of the EXHIBITION which is to be held at SOUTH KENSINGTON on the 18th inst. being a great success. Nearly every grower of plants for Covent Garden, bouquetist, vendor of fruits and vegetables, and commission agent, are preparing to contribute (some of them largely) to the effectiveness of the display. The products will not only be of a superior kind, but such as are in daily request in the homes of the affluent: hence gardeners especially may well be encouraged to visit the Exhibition. Those visiting London on this occasion may, if they are desirous of doing so, inspect the Spring Show at Regent's Park the same day by travelling on the Underground Railway from South Kensington station to Portland Road on the Metropolitan Railway.

— THE annual report of the Director of the Melbourne Botanic Garden, in referring to improvements in portions of the grounds, says that several specimens of the gorgeous scarlet-flowering *EUCALYPTUS FICIFOLIA* are there planted, and then adds:—"This magnificent plant, from Broken Inlet, Western Australia, produces its flowers at a much earlier stage of growth than any other species of the genus with which I am acquainted. Its bloom resembles a ball of fire more than anything else to which I could compare it. I have seen the Flame Tree of Illawarra, and the brilliant scarlet masses of *Erythrina laniflora* on the banks of Rawa in Fiji, but neither surpasses the effect produced by the floral display of this *Eucalyptus*."

— A BERLIN gardener claims that he effectually checked the RAVADES of CATERPILLARS last year by the simple expedient of sifting ashes over his vegetables when they were wet with dew. Perhaps he borrowed the plan from England, for it is an old one, and is often adopted successfully in preventing the Turnip beetle devouring the young crops of the Brassica family when just appearing above ground.

— A CALIFORNIAN claims to have succeeded in raising ROSES as BLACK AS INK. His plan was to engraft a slip of a dark red Rose into an Oak tree, where it grew, flourished, and blossomed, the dark sap of the Oak effectually colouring the Rose black. This statement becomes less incredulous when we remember budding a dark Rose—Standard of Marengo—on a Black Currant which grew and bloomed freely, the flowers being darker than before. A similar experiment is recorded in the new French publication "Journal des Roses."

— SINCE POTATOES have become popular, the NEW VARIETIES of AMERICAN POTATOES possess interest to cultivators. A correspondent in the New York "Rural" thus alludes to some of them:—"Centennial was produced three years ago by fertilizing the blossoms of Brownell's Beauty with pollen from the White Peachblow. It is a smooth, round, deep red tuber having few eyes, white flesh, and is very prolific. The growth of this new variety indicates hardness, and should it thrive as well in all soils and climates as it did in mine, it will become a standard variety. Brownell's Superior originated from the Beauty and the Peachblow. It is one of the handsomest coloured Potatoes now before the public. It is of very symmetrical elongated shape, its outlines being similar to the Early Rose, but the surface is much smoother, its colour is deeper, and the flesh is much finer, drier, and more floury. I consider this variety fully equal to Snowflake as a table Potato. A seedling called 'Seek no Further' from the Eureka proved very prolific but inclined to sport. Another seedling, 'Fortune,' was enormously prolific with only one objection, and that as regards shape. The Success is a white elongated seedling from Exceleur and Peachblow, is of good quality and very prolific. It will probably be introduced another season."

— IT has been generally considered the "correct thing" to trap as many MOLES as possible, but their destruction may be carried too far if it be true that at "one of the most elegant châteaux in Belgium, surrounded by a park adorned by magnificent lawns, men were employed to catch and kill the moles. After a time they were killed off and disappeared entirely, in consequence of which the grass of the lawns soon withered. The cause of the mischief was a small white worm which had been kept down by the moles. These little animals, though

troublesome at times, are, as the above incident proved, very useful on an estate. The proprietor of the chateau, after he had made the discovery, was obliged to stock his place with a fresh supply of moles, after which the lawns flourished as formerly."

— A PLEASING instance of the progress of horticulture at the antipodes is afforded by the opening of a new PALM HOUSE in the Botanic Garden, Adelaide, South Australia. The opening ceremony was performed by Lady Mnsgrave on January 22nd in the presence of the *élite* of the city. The building, the design and materials for which Dr. Schomburgk, the skilled director of the Garden, obtained from Germany, is 102 feet in length—including two half-octagons, 55 feet broad, 16 feet 6 inches high to the eaves, the centre dome being about 40 feet high. The total cost being about £3140. The arrangement of the house consists of a large rotunda in the centre nearly 50 feet in circumference at the base, and an avenue 6 or 7 feet wide from one extremity of the house to the other, as well as from the central rotunda to both entrances on either side. The avenue is lined with Tree Ferns from Queensland, Africa, New Zealand, New Caledonia, and New South Wales, and amongst them are represented *Cyathæa dealbata*, *C. Dregei*, *C. excolea*, and *C. medullaris*, the central plant in the rotunda being a fine specimen of *Latania borbonica* surrounded with ornamental-foliaged plants and Ferns. Other fine specimens in the avenues are—*Cycas revoluta*, *Anthurium coriaceum*, *Coccoloba Weddelliana*, *C. coronata*, *Martinezia erosa*, *Elceis guineensis*, *Ceroxylon niveum*, *Astrocaryum granatensis*, *Areca lutescens*, *Sabal princeps*, *S. cernescens*, *Pritchardia Martiana*, *P. macrocarpa*, *P. pacifica*, *Latania aurea*, *Trithrinax manritiaformis*, *Oreodoxa regia*, *Dæmonorops fissus*, *D. Lewisiaanus*, *D. palembanicus*, *Hypophorbe Verschaffeltii*, *Jubæa speciosa*, *Livistona subglobosa*, *Kentia Forsteriana*, *K. Belmoriana*, *Ptychosperma Alexandre*, *Thrinax elegans*, and several *Dicksonias* and *Alcophilas*. There is also a grotto artistically formed and appropriately planted, also vases and statuary.—(*S. A. Register*.)

— MANY inquiries reach us relative to the value of SPENT TAN AS MANURE. Prof. Storer states, in the last number of "The Bulletin of the Busey Institute," the results of analyses made in his laboratory of three samples of this article. According to those results 1000 lbs. of the tan would contain less than half a pound of phosphoric acid, somewhat less than a pound of potash, and from 1 to 2 lbs. of nitrogen; and since the tan has been thoroughly exhausted with water so that its soluble matters are mostly dissolved out, these substances are all in the insoluble condition, and must therefore be taken at their lowest value; moreover, it is probable that the nitrogen would pass but slowly and incompletely into soluble and assimilable forms in the soil.

— It is well known that the earliest crops of POTATOES usually escape the disease, and according to the evidence of Mr. Josiah Hoopes in the *New York Tribune* they similarly escape the attacks of the Colorado beetle. With the object of evading that destructive pest Mr. Hoopes has relied on the early sorts for his main crop, and with excellent results.

— Two specimens of deciduous MAGNOLIAS, *M. conspicua* and its variety *M. Soulangiana*, flowering in pots in Mr. Williams's show house at Holloway, suggest how effective these shrubs are for conservatory decoration. The large white blossoms 3 or 4 inches across are conspicuous at any time, but especially so when having a background of Palms and Ferns, which "brings them out" to great advantage. The flowers are much more pure also when expanded under glass than in the open air. Moderate-sized shrubs blossom very freely.

PRIMULA INTERMEDIA.

This was discovered in Siberia by Gmelin, the Swedish botanist, as long since as 1747, but has very undeservedly been lost. It is a very pretty species with pink flowers, and is thus described by Mr. Curtis in 1809:—

"It was raised by Mr. Loddiges from seeds sent from Siberia, and appears to be intermediate between *Primula farinosa* and *nivalis*. The scape is longer than that of *farinosa*, and more slender than in either of the other allied species; the leaves are green on both sides without any meanness, and lie flatter on the ground than in the others; the calyx is very nearly as long as the tube of the corolla, and its segments are more acute than in *farinosa*; the bracts composing the involucre are shorter by half than the pedicels, and are incurved.

"Gmelin states that this sort is far more common in Siberia than the *farinosa*, of which however he considers it as a variety; but to us as well as to Mr. Loddiges, who was in the habit of cultivating all three, it appears to come as near to

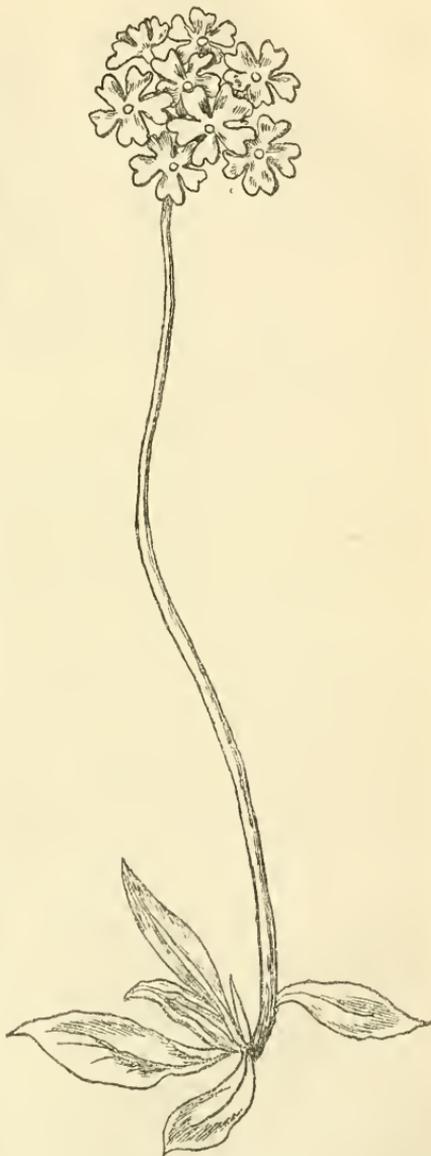


Fig. 85.—*Primula intermedia*.

nivalis. Perhaps all three may be considered as only varieties of the same species, yet they seem to be permanent, and not at all inclined to change from one to another.

"It flowers in May. Propagated by seeds or parting its roots, but is much more difficult to be preserved than either

of the other species, being very impatient both of wet and drought."

SEDUM SPECTABILE AND SEDUM AZORICUM VARIEGATUM.

Mr. ROSSON has called attention to the merits of *Sedum spectabile* for the various purposes of bedding, vase, and conservatory decoration; and subsequently another contributor, "J. T. P.," pointed out the mode to grow it to perfection. Valuable as the latter information undoubtedly is, your readers will be pleased to learn that this *Sedum* is one of those convenient plants that can hardly be put in a wrong place, and, without unduly encroaching on the space required by its neighbour, is capable of doing well without receiving any extra assistance when planted in a vase, and that vase occupying a position where watering is inconvenient. I do not know of any plants which succeed better without water than do the two above named, while at the same time water does not injure them as it often does many other succulent plants. *Sedum spectabile* is one of those peculiarly convenient plants that it does very well either with water occasionally like other plants, or can endure a very long time without it, even in dry weather. This qualification fits it especially for occupying vases in exposed positions, as it resists wind as well as sun; and for all the other purposes of bedding or occupying a place in the herbaceous border or elsewhere it is almost without a rival. The wonder is how a plant possessing so many good qualities should have remained so long unnoticed.

It is a very old plant, but my acquaintance with it dates no farther back than 1862, when I observed it, I think, in the conservatory of the Royal Horticultural Society's garden at Kensington. It was then, I believe, called by another name, but its merits struck me as being such as to qualify it for other purposes. I therefore obtained a plant; but I confess feeling not a little mortified when, on pointing it out to an old cottager at the time it flowered with me under glass, he asserted he had the same plant in flower in his garden, and had had it there all his life, it being perfectly hardy. Furthermore, he asserted his belief that it was a British plant and to be met with in a wild state in certain places. This latter assumption I think is not the case, at least I have never heard of its being found in a truly wild state. Although as the outcrop of a garden it will struggle on amongst other herbage, and the ease with which roots are emitted from any part of its shoots would appear to favour its propagation under many ordinary circumstances in which it might be placed, yet I doubt much of its being truly wild. There is another *Sedum* with a flower of a brownish red colour which is sometimes met with in old gardens: this I believe is wild on some favoured dry rocky situations in Britain, but is not so pretty as *S. spectabile*.

The ease with which the latter is propagated is not the least of its merits, for, as one of your correspondents remarks, the young shoots that are furnished so numerously in spring will all grow into plants the same year if they are only inserted in the soil. I have occasionally pulled off a quantity and merely inserted them into the common soil, totally regardless of sun, shade, or sand, and they have every one grown. About the beginning or middle of March they are of a suitable size, and the plant may be propagated to any extent without any of the requirements so necessary for so many other plants. If they only are placed on the ground the right end uppermost I think they will all grow. Young plants produce the largest flowers; but I have never taken the trouble of thinning the shoots for the purpose of obtaining extra-sized flowers, for the reason that when grown in beds there is generally plenty of large as well as small flowers, and I think that both are better than all large, and in vases we cannot have too many flower heads; moreover, where a quantity of shoots are taken off for propagating, those remaining most likely do become stronger. I had a large oval bed in which the plants flowered for many years, looking remarkably well. The ground was slightly raised in the centre, and the flowers were in a perfect mass exactly parallel to the surface of the bed, filling it completely; the plants being the first season about a foot from each other, but afterwards one-half of them were removed. An edging of another plant surrounded the bed, which was often *Iris* or some other dark-leaved plant. This bed was as attractive as any in the garden, and required no attention whatever, only removing the edging plants when no longer slightly and cutting down the *Sedum*, which, however, was not done too early. As the bed was at some distance from the ordinary observer the ap-

pearance when the autumn had destroyed its floral beauty was not objected to, and the stems remaining sheltered the incipient buds. I do not think, however, any ordinary treatment is at all likely to kill this plant, as with the exception of such plants as Horseradish and some of the coarse weeds I do not know of anyone more tenacious of life or easier to grow.

Sedum azoricum variegatum.—Although differing widely from the last, this plant, too, is deserving of more extended cultivation than is usually accorded it. It is dwarf and prostrate in growth, but it is well adapted for small vases, and being perfectly hardy is suitable for such as occupy exposed situations. In a normal condition its foliage is of a glaucous hue, but when each leaf is deeply tipped with a pretty creamy yellow its appearance is very neat. It is seldom met with more than 4 or 5 inches high, very often not so much, but is well fitted for occupying the edges of window boxes and such places where a permanent plant is required. I think I have directed attention to this *Sedum* before, and only repeat it here where the merits of the other one called for something being said in favour of another member of the family. Of other dwarf species someone else will possibly say something, as there are several that possess what I esteem one of the chief recommendations a plant can have—i.e., of being hardy.—J. ROSSON.

SCARLET RUNNER.

This is a favourite and useful summer vegetable. In England and Wales it is grown in nearly every cottage garden, but in Scotland it is not so well known; indeed, one may see hundreds of cottage gardens there where this Bean was never grown, and those who do grow it generally do so for the beauty of the scarlet flowers and the value of the plant as a climber; but the pods are considered unfit for food. Such, however, is by no means the case, as few vegetables are more wholesome or better-flavoured, and it has the advantage of growing and fruiting in cold localities where the Dwarf Kidney Bean does not succeed.

Some writers have the "knack" of filling two or three pages with instructions of how to grow some very small and unimportant plant or crop; but all that need be said about the Scarlet Runner may be put in few words, because it is one of the easiest of vegetables to cultivate, and it comes in long after Peas and tender Dwarf Beans are past. In some large gardens Scarlet Runners are grown to come in wholly for late use, but in small gardens they may be sown to come early and a long time in succession.

In preparing the ground, the part on which the row will grow must be dug or trenched about 18 inches deep, adding at the same time plenty of strong manure. The roots do not run far, consequently it makes little difference what kind of soil it is a few feet from the row. When a piece of ground is wholly devoted to them the rows must be 5 feet apart. Seed may be sown about the last week in April for the first supply, and after this sowings may be made as required until the first week in August. When the plants are about 4 inches high earth them up and put in the stakes. These may be placed 3 inches apart, and they must be 5 feet high. The Beans may grow taller, but it is the best plan to top them when they attain this height. It is not often that any distinction is made in variety of Scarlet Runners, but one named Premier and Webb's Selected are two very superior varieties.—A KITCHEN GARDENER.

P.S.—I see a list of vegetables given at page 201 for swampy ground. Scarlet Runners may with safety be added to those named.

BRODLEA CALIFORNICA.

Of the many strange and wonderful growths found in California, the botanist finds few of a more peculiar habit, and none that I know of deserves more attention than this *Brodlea*. No other plant in the vegetable world acts as does this one.

Brodlea californica belongs to the natural order Liliaceae, and is known among the mass of floral people as the Twining Hyacinth, a name which it well deserves, as will be seen by the description given below. It has two near relations, both natives of California, but of a different habit; they are *B. eocinea*, bearing crimson flowers; and *B. grandiflora*, bearing blue flowers.

B. californica starts growing early in the spring, it sends up from two to four leaves, the latter very seldom; these are of

various shades of green, being very dark where exposed to the sunlight, and light in the shade; they vary from one-half to 1 inch in diameter, and from 1 to 3 feet in length. I have often gathered them of over a yard in length, but they were always from plants in the shade; they have a deep channel running the entire length, and nearly always lie prostrate on the ground.

The flower stem starts about the middle of May. As soon as it is 5 or 6 inches long it commences twining itself over any shrub or plant in its vicinity; whether 5 or 10 feet high, it keeps on twining until it reaches the top of its support.

It takes from two to four weeks to reach the top of its support, and all this time the flower bud remains dormant. After reaching the greatest height it can, it stops to take a rest for a week or two. Then occurs the most singular phenomenon of all. The stem breaks off close to the ground, and keeps no connection whatever with mother earth, which until this time has given it nourishment; now the flower bud begins to expand and grows for about two weeks, when the bud opens and exposes to view from six to sixty other flower buds, which up to this time have been safely hidden from view. In about a week, between the 1st and the middle of July, the flowers open, and remain from two to six weeks, and this without any connection with the earth whatever. Whether it derives nourishment from the shrub supporting it, or the air, I am not prepared to say.

The flowers are of various shades of pink and pinkish purple; as before stated they are borne in clusters of from twelve to sixty; they are from one-half to 1 inch in diameter, and the clusters from 1 to 6 inches in diameter.

Plant them about 4 inches deep, in rather good rich soil near some bush or shrub, so as to afford some support. Cover in a cold climate with suitable covering. Give no water except what it receives naturally.—W. C. L. DREW (in *American Gardener's Monthly*).

Brodia californica was brought from California to the Royal Horticultural Society's gardens by Mr. Hartweg in 1818, and flowered during the following year. It is a pretty hardy bulbous plant, requiring the same treatment as *Scilla*.—EDS.]

FAILURE OF EARLY-STARTED VINES.

THERE certainly are many complaints this year of Vines which have been started early breaking very badly. Though I have no wish to be boastful, yet I would like to say that the early Vines under my charge have done well, and I may add they were started at Christmas with a temperature of about 55° by day and about 50° by night. I like to sprinkle the rods with a syringe morning and evening till the buds commence swelling.

It will be in the recollection of all (gardeners at any rate I do not think will forget) what a very dry summer we had last year, followed by a very wet and mild autumn, and Vine borders which were neglected during the dry weather have been those in which the Vines have suffered, simply because they have not had the moisture and nourishment at their roots to enable them to perfect their buds for the following year; and it must be remembered the buds are forming and swelling from the time the Vines start the previous year, and any check they receive must be very prejudicial to their future development.

Perhaps it is almost impossible to give Vines too much water, where they have good drainage, by either natural or artificial means. At any rate they should have a good watering once a week during dry weather, especially where the Vines are young and the roots have not roamed away outside the border. Where manure cannot be obtained give the surface of the border a dressing of guano or bone dust, and slightly fork it in before watering. If the border can be mulched it will save much watering; but where the borders are in the flower garden mulching will look rather untidy.

The pruning of Vines has perhaps something to do with their failure in breaking. I do not think it is well to prune too close to the old rods, at any rate not the whole of the shoots, but as near as possible. Prune every alternate shoot back to the third eye, the other shoot to be pruned close to the old wood. It will be found the bunches that are produced on the shoots that have not been pruned close will lengthen-out more freely and have much larger berries than those from spurs pruned close. The following year the shoots that have been pruned long should be cut close, and those that have been pruned short should be cut back to the second or third eye.

I will on a future occasion detail my experience about training up young rods.—W. ETHERINGTON, *Swancombe Manor*,

KEW GARDENS AND PLEASURE GROUNDS.

THESE are more than two hundred acres in extent. The surface is flat, but judicious planting, bold clumps of shrubs, and easy winding walks, have added some of the best features. The terrace, the long vista walks and avenues, the waterworks, and architectural elevations are combined very satisfactorily, and will be more effective as the growth of the planting will mark the features more prominently. A progressive series of improvements is annually taking place, rendering every portion of the surface of the grounds interesting and useful. Numerous species of hardy trees, shrubs, and flowers are exhibited in various parts of the grounds. The extensive glass structures are filled with the choicest productions of the vegetable kingdom. One of the most prominent houses is the great temperate house. It is a noble structure, covering about one and two-thirds of an acre, and is 60 feet high. Three miles and three quarters of hot-water piping are required to keep the temperature about 40° in winter. The plants are planted out in the borders.

The Palm house is another conspicuous object. It is a very handsome building, 302 feet in length and 100 in width. Round the centre portion is a gallery, which is reached by winding staircases, and from this gallery the plants can be seen to the best advantage. The variety of forms is presented in a pleasing manner, showing the outline of each individual plant separately. There are the museums and herbariums for dried specimens of plants, which afford also means of instruction and enjoyment available to all.

Kew Gardens may be regarded as the botanical centre of the world, and are valuable for the assistance furnished by them to horticulture, botany, medicine, manufacturing art, and design. To the horticultural pupil this garden will be found an important field for the study and culture of plants, and facilities are presented of an inviting description towards the attainment of useful and practical information. The name, order, economic use, and native country of each plant, and date of its introduction is stated, and professional instruction is imparted, for lectures are delivered in the gardens.

Kew Gardens were originally the grounds surrounding the country house of Dr. Molyneux, a distinguished man of science in the reign of George II. At his death the property passed into the hands of Frederick, Prince of Wales, and eventually to his widow, the Dowager Princess. In the reign of their son, George III., numerous improvements were made. Two conservatories were built, and the gardens received many valuable acquisitions from the voyages and researches of Capt. Cook, Sir Joseph Banks, Flinders, Masson, and others. In 1789 an catalogue was published by Joseph Aiton under the title of "*Hortus Kewensis*," giving a description of 5600 species of plants, all of them exotic. The grounds remained the property of the Sovereign until 1840, when they were passed over to the department of the woods and forests on the behalf of the nation. The sum devoted to the maintenance and improvement of the establishment amounts to about £20,000 per annum.

Kew Gardens present great advantages all the year round, for here are gathered together plants from all corners of the globe—every country has been ransacked for these vegetable treasures. In the Palm house is the Date Palm of Africa, the plumed Cocoa-nut Palm of Ceylon, the Fan Palm (*Lantania horbonica*), its broad leaves and noble appearance giving it a distinct character. Next in point of interest is the Sago Palm (*Sagus farinifera*), remarkable for yielding the substance called by that name. Another Palm of great beauty is the Cabbage Tree of the West Indies (*Areca oleracea*); and *Areca catechu* is a Palm of the same genus, and produces the intoxicating Betel Nut. There are also fine examples of the Wine Palm (*Caryota urens*), *Sesuvium elegans*, and the Sugar Palm (*Arenga saccharifera*). Palms are well represented at Kew; most of them are unique specimens.

In a walk through this house, besides the interesting tribe of plants I have alluded to, there are numerous other species. Amongst them may be noticed the magnificent and gigantic genus *Musa* or Plantain, the leaves 10 feet in length and 3 feet in breadth. The stems of these majestic inhabitants of the jungle we are informed afford the most delicious feast to the elephant and the rhinoceros. Next in point of interest are the Cycads, which from their great external resemblance to Palms are apt

to be confounded with them. The manner in which the leaves are evolved is highly curious and extremely beautiful, similar to that in which the fronds of the Fern tribe are developed, to which they are also somewhat allied. The attractive leaves of the *Draconas* and the ornamental foliage of the *Aralias* are scattered about in various parts, forming pleasing features in the scene, particularly the hybrid varieties lately introduced by cultivators. Around the pillars and upon the rafters various climbing plants are entwining. Of Ferns there is an immense stock. The collection comprises every desirable kind from all parts of the world. Several large houses are devoted to their culture, and great attention is bestowed on them. Those from the tropics are peculiarly grand and imposing. Several of the species attain the size and appearance of some Palm trees, with fronds most elegant. They are for the most part easily cultivated. It is surprising that this extensive and elegant class of plants should have been so long neglected, for who can watch even our common British Ferns—those humble denizens of the earth—bursting from the ground in spring, without experiencing emotions of pleasure?

The Succulent house is a capacious span-roofed building 200 feet in length by 30 feet in width. It contains a very fine collection of plants, and it would be difficult to find anywhere a house of plants more remarkable and grotesque. One of the most curious plants in the house is the Old Man Cactus (*Pilococcus senilis*). This odd plant is covered with long, whitish, hair-like appendages separating on the top like the combed locks of some veteran. Another object, very quaint-looking, is the *Opuntia vulgaris* or Prickly Pear; its Fig-like fruit is eatable. There are several varieties of this plant. *Opuntia cochinillifera*, the plant on which that valuable insect principally feeds upon, is represented. Another prominent object is the Torch Thistle (*Cereus Jamaesaru*), native of Tropical America. The Euphorbias are strange-looking plants; they are natives of Africa, India, and Tropical America principally, but different members of the genus are found all over the world, and are generally known by the name of "Deadly Milk Plant." The Cactuses are also very numerous, some of them of a gigantic size and fierce aspect. The exquisite beauty and perfume of the flowers of very many of the species are also so striking that no collection can be considered complete without them. Of the genus *Aloe* the collection contains many large and striking plants; some of the species are well known for their medicinal qualities, such as the *Aloe socotrina*. The *Aloe barbadensis*, *A. vulgaris*, *A. spicata*, and the Tree *Aloe* (*arborescens*), are principally cultivated in the West India Islands for the purpose of producing the Aloes of commerce.

Before leaving this house I will remark, that besides the interesting plants I have thus briefly alluded to there are hundreds of others which strike the visitor's attention, such as the noble *Dasylirops*, the Bearcress with their drooping leaves from 6 to 8 feet long, *Crassulas*, *Cotyledons*, *Kleinias*, and *Mesembryanthemums*.

The Orchid houses are of great extent. Several hundred species of these plants are in successful cultivation. This numerous tribe certainly surpasses any others with which we are acquainted, whether their delicacy of tint, curious form, or intricacy of structure is regarded. It is impossible to view a collection of these plants when in flower without astonishment at the wonderful resemblance to some work either of animal nature or of art, there being scarcely one of them that may not be compared to some kind of insect; for instance, *Oncidium papilio*, the flower of which plant resembles a butterfly, and produced on a thin gossamer-like stalk which waves about in the air that one can hardly fancy it otherwise than a living creature. Then there is the Pitcher-plant from New Holland (*Cephalotus follicularis*), looking like some production of fanciful art; and there are other similar vegetable curiosities, some flowers resembling the bee, the fly, the spider, and others are shaped like hoods, helmets, and slippers. Many of this highly interesting tribe of plants are here growing in almost every possible situation—on blocks of wood, naked stones, on the stems of a Tree Fern, and in other situations in which there is little if any soil to support vegetable life. They seem to derive their chief nourishment from the air. Happily, too, there is not a month in the year that some one or other is not in blossom, though the spring sun induces the flowering in a very marked degree.

The Exhibition house is another large building containing a miscellaneous collection varying according to the season of the year, plants being removed and replaced by others as the flowering season passes. In this house there is a high order

of floral beauty kept-up winter and summer. In the spring bulbs take a prominent part, such as Hyacinths, Tulips, Narcissuses, Cyclamens, and others. These are replaced by other plants as the season advances, and the house is thus rendered attractive "all the year round."—N. COLE, Kensington.

FRANCISCEAS.

The genus *Francisceas* comprises some of the freest early spring flowering and most easily cultivated of evergreen stove shrubs. Moderate in growth, and not requiring a very high temperature, they are readily accommodated in a cool stove. The best of the genus is *F. calycina* major, of sturdy compact spreading growth, having large deep green shining leaves, large flat flowers 3 to 4 inches or more in diameter, of a deep purple colour, borne in terminal heads, each productive of a large number of flowers successively produced, the flowering enduring about a month. It usually commences flowering in March, and seldom fails to flower again in late summer.

F. confertiflora (*aurifolia*) has very large terminal heads of purple flowers, not so large individually as those of *F. calycina* major, but more numerous, often twenty and more in a head, the habit of the plant being more loose and freer, for whilst the last-named will be a round-headed bush 2 feet high, *F. confertiflora* will be 3 to 4 feet in height. *F. confertiflora* variegata, with its leaves very much variegated with creamy white, though less pretentious than many stove variegated plants, is very attractive, particularly when in flower. Both flower in March or early April, and are very handsome.

F. acuminata flowers a little later; *F. eximia*, a very good kind, with *F. Lindeniana*, pale purple, of erect habit, and having long linear leaves, usually flower in April and May; and *F. unicolor*, which may be said to have no fixed time of flowering, but grows, flowers, rests awhile, again growing and flowering. There are also *F. latifolia*, *F. macrantha*, and the allied *Brunfelsia grandiflora* and *B. nitida*. All are from the West Indies and Brazil.

Francisceas produce their flowers upon the current year's growth, and are terminal, appearing with and terminating the young growth, therefore no stopping must be resorted to. If due regard has been paid to pruning the young plants, so as to have them well furnished to commence with, not much trimming will be afterwards necessary. When the plants become overgrown they may be cut back early in February, keeping rather dry until the plants break fresh, when more moisture will be needed; and when the shoots are an inch long repeat, removing most of the old soil, keeping rather close, moist, and shaded, and watering carefully until re-established. It is preferable to replace old worn specimens by young healthy plants rather than to resuscitate the former.

Plants flower very freely in a young state, and keep on for a number of years increasing in size and floral beauty, requiring only a light and airy situation in the stove, with a moist atmosphere and free watering when growing, and after the leaves become firm in texture watering only to keep the foliage from becoming limp. A temperature of 50° to 55° is quite safe to winter them in from October to February, when, as growth will be taking place, they may then be repotted, removing most of the old soil or what comes away freely, returning to the same or a little larger pot, providing good drainage, and employing a compost of three parts turfy loam, with a part old cow dung or leaf soil, adding some rather small pieces of charcoal, about a sixth, and a like proportion of sand. Pot moderately firm, and water carefully, sprinkling overhead twice daily, and sprinkling the floors, &c., thrice a day. When growing freely water copiously until the growth is matured, and then sparingly.

Instead of potting before flowering I prefer to top-dress the plants, removing the surface soil down to the roots, replacing it with some rich turfy loam and old cow dung in equal parts, supplementing with manure watering after the buds show. Potting in this case is deferred until the blooming is past—much the best time, only we have to shade for a time until the potting is recovered from. The plants are kept syringed twice daily through the summer, and when in flower syringing does not injure the flowers, which is more than can be said of many flowering plants. The temperature after February may be 60° to 55° night until April, with 5° higher afterwards, and the usual rise of 5° to 10° by day in dull weather, and 15° to 20° or more with sun and air. *Francisceas* may indeed be grown well in an intermediate house. I know of no plants

that are more easily cultivated and better repay any extra attention bestowed on them.

Aphis attacks the young growths, and thrips the mature shoots, both yielding to fumigation with tobacco. Mealy bug seems to delight in this class of plants, but it does not make much headway when the plants are duly syringed, and it may be destroyed by softsoap solutions.

Propagation is effected by cuttings of the young shoots when rather firm at the base, inserted in sandy soil in a brick moist heat and shaded from sun; also by seeds, which should be sown as soon as ripe.—G. ABBEY.

LISMORE CASTLE,

SEAT OF THE DUKE OF DEVONSHIRE.

This is a residence truly of the "olden time," for it was built by King John in the twelfth century on the ruins of St. Carthagh Abbey. Many tales cluster round the locality,

mountains. The terrace is flanked at either end by old towers, the scene of many a sharp conflict in days of yore. There is a good range of glass in the kitchen garden, a large vinery, stovehouse, pits, greenhouse, &c.; but these have lately been undergoing extensive repairs, and the Vine border has also been renewed, and a division placed in the vinery. The castle garden is celebrated for some very fine Camellias, and the houses show a fine stock of healthy-growing plants of every kind. The spring bedding is on a somewhat extensive scale, and the large beds—one of a serpentine design, borrowed from an old Irish misal—look extremely handsome at present. The gardens are under the able management of Mr. David Jack.

ASTERS.

It is well known that these are among the most favourite flowers cultivated by amateurs for outdoor decoration in summer. Sometimes they are planted in mixed borders, also in

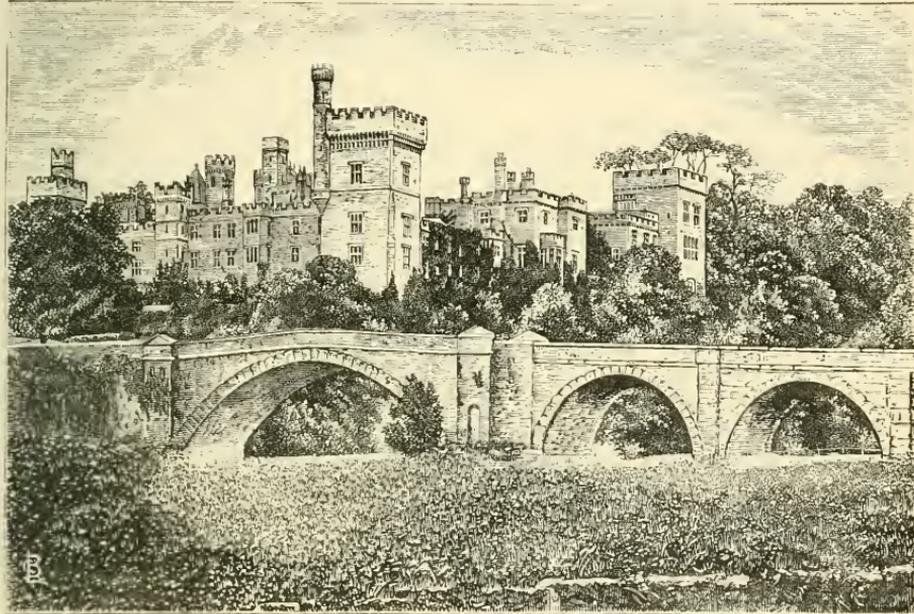


Fig. 36.—LISMORE CASTLE.

but one fact is more worthy of remembrance than any of them. Here was born Robert Boyle, one of the most learned of our men of science, and one so truly christian that it has been well said he will always be deserving of the affection and admiration of succeeding ages.

The castle is on the verge of a rocky hill on the bank of the river Blackwater, near the town of Lismore in the county of Waterford, Ireland. The flower garden, familiarly known as the Lower Garden, is not of very large extent, but is singularly varied and beautiful, full of pleasing shrubberies and flowered slopes. It has been in its arrangement and design almost a work of chance, having been added to from time to time. A high road once traversed its centre, and the terrace—which is one of its chief ornaments, with two grand flower beds of beautiful design—resulted from alterations in the edifices of the castle. The finest trees in the garden are a splendid Cedar of Lebanon, a good Deodar, and a noble avenue of Yews—very tall and large trees, though only about 160 years old. Sikkim Rhododendrons flourish well in this mild and sheltered situation, as do all shrubs; but it is rather too shady for bedding plants, which are apt to run to leaf.

The upper or kitchen garden has a very fine terrace, commanding a beautiful view of Knockmele, Down, and Comragh

rows or in small beds, and in all these ways they are easily grown and effective.

A succession of Asters may be had by sowing the seed at different times. No time must now be lost in sowing the seed to produce the earliest plants and flowers. Place a few rough leaves at the bottom of a pan or small square box, and fill up the remainder with a mixture of loam, decayed leaves, and sand; press this down firmly, and then make small drills about 2 inches apart and 1 inch deep with the finger; sow the seed thinly in these and then level the surface. If the soil is damp do not give any water, but place the pan in a house or pit with a heat of 50° or in a frame, and keep it close until the young plants appear, after which give air on fine days. As soon as the plants are large enough to handle prick them out into a frame, under a hand-light, or into pans or boxes the same as the seed was sown in. A little manure must be added to the soil at this time; this treatment will be found to furnish plants in excellent order for planting in their flowering quarters by the middle of May.

The ground in which they are finally planted must be open and rich, as it is an important matter to secure free growth at first to ensure fine blooms. I have no doubt many will have seen the plants cease growing for a time after having been

planted out, and the leaves become curled as if attacked by green fly. This is the result of careless planting and poor soil; and although the plants may make a fresh start and then bloom, the flowers are never so fine as those on plants which were never checked. The plants need not be more than 12 inches apart. During dry hot weather they are greatly benefited by a mulching over the roots of short dung, or grass from the lawn.

For late flowering the seed must be sown in May, and the seed may either be sown broadcast or in rows like Cabbage or Onion seed. I always sow the seed so thin that the plants do not require to be thinned or transplanted from the seed bed until they are planted where they are to bloom, and I think they suffer less in dry weather in this way than when shifted often. Watering has to be well attended to in the case of this latter sowing. Some plants throw up a cluster of flowers, but when the finest "show" blooms are wanted these must be reduced to two or three on a plant. Those who have no means of raising early plants need never fail in having plenty of late Asters. In buying seed it is generally had in packets, and these contain twelve sorts which when well selected include every known colour. Amongst those which I have grown I have selected Betteridge's Globe Quilled, Finest German Quilled, Dwarf Bouquet, Dwarf Chrysanthemum-flowered and New Victoria for the main display. The dwarf varieties are most suitable for small beds.—*FLOREST.*

COMPOSTS FOR POT PLANTS.

ONE of the most important matters connected with the cultivation of exotic flowers and fruits—which have in this country to be cultivated under glass, in pots or restricted borders, and have, as a consequence, to be constantly supplied with water by artificial means—must always be the constituents of the soil in which they are potted or planted. Although certain plants appear to be not over-particular as to whether they are potted or planted in loam or peat as a basis for a compost, yet even such plants attain to different degrees of health and vigour when the soil most suited to their nature preponderates. Good culture in all other respects lessens the evils arising from a misapplication of soils; but when a plant finds its element in this respect, and is otherwise properly cared for, its character is developed with more freshness and vigour.

We believe it is correct to say that the chief features of the horticulture of the present, as compared to that of the past, is, that complicated mixtures of soils and manures are less used and believed in as "the secret" of successful culture, and that the tendency is still in the direction of simplicity in this respect. Mixtures, when compounded from fancy and with little knowledge of the elements of chemistry, may, or may not, be compounds of evil. After many years of extensive practice, we are thoroughly convinced that the mixing of different sorts of soils and manures for potting plants in general, is an evil to be avoided; and feel certain that a plant that thrives in loam will thrive still better in it ultimately—make a more healthy, fruitful, and older plant—if there are no animal or organic manures mixed with the turfy loam. We, of course, mean all organic manures of a rapidly changing character which putrefies, even though in that process the substances formed are highly important to plant life. All such, and humus of every description, are best left out of the soil in which all the slower and more hardwooded plants are potted, if they are to be healthy, floriferous, and long-lived. By so doing the soil runs far less risk of becoming what is well understood by the term soured, and, of course, unhealthy. It may be asked, Are the excrements of animals and decaying vegetation not beneficial to such plants? Undoubtedly they are, but not mixed in with the soil in a narrow deep vessel like a flower pot. Such highly stimulating, and more or less fermenting, substances are best applied as a top-dressing when the plants require it. The turfy loam generally used for potting purposes, at first, much organic matter of a less rapidly changing (because to some extent differently incorporated with the soil), as well as of a more natural character; and, as a rule, no other manure need be mixed with the ball of earth in the pot, unless it be of a less rapidly changing character, such as ground bones. Take, for instance, a Camellia and a Pine Apple—plants of very diverse characters. They thrive splendidly in light turfy loam, and require nothing else until their pots get pretty well filled with roots. Then a top-dressing of rich manure is of immense benefit to them, which, if mixed with the soil at the time of potting, is not only not necessary but

positively injurious. The roots which these two plants make in the loam, pure and simple—with perhaps the addition of some charcoal and bones—are far more numerous and of a different character to those produced in soil made rich and soft with rapidly decaying manure, in which the roots are long and less twiggy, escaping more rapidly down among the drainage into simpler and sweeter fare.

As a rule we neglect far too much Nature's rule of potting and nourishing her children. We put manure of a too gross Nature into the soil; Nature lays it on the surface. We keep stones out of it far too much, as a rule; Nature is prodigal in her supply of stones. We give a narrow, deep body of soil, with comparatively little surface exposed to the air, and that little is far too often a mass of gangrene or slime; on the other hand, Nature, as a rule, gives a shallow body of earth with a great wealth of surface clothed with living verdure of some sort. In all these respects we cannot in small glass houses follow the lead of Nature in the culture of plants in pots, but the further the departure from her ways the more likely we are to be in error. We can, however, top-dress more and mix less humus in our composts. Who will say that flower pots would not be better if made a little shallower and a little wider? With regard to the mixture of stones or charcoal, or clean broken potsherds, this can be followed without any offence to the eye or any extra space. This we have come to regard as a cardinal point in the pot-culture of nearly all plants that are not of the grossest and most ephemeral kind. Who that has had much to do with plant-growing and potting has not noticed that a plant that has had clean crocks, or, best of all, charcoal mixed to a liberal extent, with the soil in which it has been potted, has always been in a more satisfactory condition the next time it required a shift, than when these substances find no place in the soil? Take an Azalea or a Camellia, and in potting it fill one side of the pot with soil in which charcoal is liberally mixed, and the other with soil devoid of that substance, and in twelve months, when the plant needs another shift, it will be found that there are double the number of rootlets on the side of the charcoal to what there is on the other. Wherever a few pieces of broken pot or charcoal are found in the ball of a plant, there the roots are found to muster in greatest numbers and health.

The mixing of these substances in imitation of Nature's prodigality of stones is not practised to the hundredth part in plant culture that its good effects demand. Charcoal has a wondrous charm for roots, and is of the very foremost importance in the soil of nearly all pot-grown plants. It has a beneficial mechanical effect; has a sweetening tendency; is highly useful, absorbing ammonia and other plant food from air and water, and from all decaying substances in its vicinity; while its own character is most unchangeable. It prevents stagnant water; and being such a storehouse, it is a safeguard against extreme drought. In the case of nine plants out of every ten it would be well if charcoal formed a fifth part of the whole compost in which they are potted.—(*The Gardener.*)

ASPECTS OF NATURE—MARCH.

WITH March our twelve-months floral garland is complete. With Fickle April our aspects of the month began, and with the first truly flowery time of the year we end our contemplation of Nature in her unenlivened wilds.

This year spring has been unusually bountiful in furnishing us with blossoms and May flowers, which as a rule open only to bid farewell to the boisterous month, and reserve their full beauty for the genial sunshine, and showers of April have been with us weeks. The earlier days of March were beneficial in that they brought a change from the too great mildness of temperature of January and February to a frost and cold wind,

"Which, like the tyrannous breathing of the north,
Checks all our buds from blowing."

A timely check, which promised to rid us of a few March flowers and render more umbrageous and blossomy our summer bowers.

Perhaps there is no month in the whole twelve which has given rise to a greater number of proverbs than March. The almost incalculable benefit of dry weather at this season being embodied in such sayings as—"A dry cold March never begets bread," "a wet March makes a sad autumn," "a bushel of March dust is worth a king's ransom;" nor do the characteristics of a blustering March appear to have suffered much change, for the ancient Romans named the season after the roughest and rudest of the famed Olympian gods.

The Violet and Primrose are looked upon as essentially March flowers, although they, particularly the former, often appear in February and remain until

"The flowery May, who from her green lap throws
The yellow Cowslip and the pale Primrose."

Lesser lights of the floral world of wildings there are in abundance. The Blind Nettles, both purple and white, are covering every nuttrodken waste, but small and inconspicuous in bloom they are overlooked, while the brilliant flowers of the Coltsfoot in dry sterile spots and the starlike blossoms of the Lesser Celandine on moist banks attract attention.

The Periwinkle now begins to show its deep blue flowers along its trailing branch of bright glossy leaves. It grows in almost every cottage garden, but the very finest blossoms may be seen beneath the now-sprouting Hawthorn hedge, carpeting the earth with rich green and throwing up dozens of azure flowers. Even Chaucer sang the old old song of Violet and Periwinkle in spring, for, describing his *parterre*, he says—

"There sprang the Violets all newe,
And fresh Periwink, rich of hewe."

We may imagine the county of Warwick to have been fertile in the production of Violets, for Shakespeare alludes to them frequently, and compares a strain of sweet music to the delicious scent of this flower—

"Oh! it came 'er my ear like the sweet south
That breathes upon a bank of Violets,
Stealing and giving odour."

With the coming of the March Violet, both blue and white, we have also the advent of the Daffodil,

"Which comes before the swallow dares, and takes
The winds of March with beauty."

The wild Daffodil, like the elegant pendulous *Fritillaria* of the meadows, appears to be capricious in its choice of a habitat—unsudden, undiscoverable often for miles of rural lanes and fields, it suddenly crops up in some particularly favoured spot, and year after year makes the place unique in beauty. Such is the case with a stretch of land at one side of Hazeley Heath in Hampshire, where the Daffodils flourish to such an extent that the village girls and boys resort to the neighbourhood and gather immense bunches of these flowers during the season of Easter. In like manner the *Fritillaria* affects certain meadows by the side of the Kennet and Avon Canal, not far from Reading, growing in such profusion as to truly enamel the grass with its graceful bells of chequered or pale greenish white flowers.

But it is not alone the lowly blossoms of wayside copse and field that greet us in March, but on the breezy common and exposed heath the golden Gorse opens its honey-laden flowers, inviting the visits of the bees on every sunny day. The delicate essence of green which now pervades both tree and bush is beautifully described by Bishop Mant—

"Currant and prickly Gooseberry,
Along the Hawthorn's level line,
On bush of fragrant Eglantine,
On Bramble, and pithy Elder pale,
On Larch and Woodbine's twisted trail,
And Willow lithe, there's flush of green;
The forward Sycamore display
Their foliage, and the shining spray
Of Chestnut to the sun protrude
His lengthened and expanding hand,
Which once unwrapped, in vain would Art
Fold it anew."

The spring-like beauty of the groves and meadows and the varied charms of Nature are at this time greatly enhanced by the melodies of the wild songsters, which, perched on tree or shrub, trill forth their contentment at the return of the genial season. The skylark mounts high into the air with his cheeriest and blithest carol; the thrush and blackbird warble their sweetest notes to cheer their feathered choice; and the robin, which has kept his cheerfulness through all the disheartening surroundings of a wet dreary winter, now breathes forth in the full melody of his summer song.—T. S. J.

BULLFINCHES, SQUIRRELS, AND HEDGEHOGS.

"WILTSHIRE RECTOR" writes like many others, that he cannot say anything in favour of the bullfinch, nor, I am sorry to say, can I. Hereabouts this year they have been very plentiful, and some of the Gooseberry orchards are entirely denuded of fruit buds, the bushes being quite bare; so likewise are many of my own, until in self-defence I have been obliged to order the bullfinches to be destroyed as much as possible, for I cannot find that they do any good.

I think there is more laid to the charge of the squirrels than they deserve. With regard to their eating-out the Fir-tree tops, many of the tops are blown off by high winds and also broken off by birds perching on them; still squirrels do eat fruit. Two came to my Strawberry beds and carried off some fruit, but a few white feathers on a string scared them away, and I still had the pleasure of watching them at play in the Oak trees.

As regards the hedgehog, I have had many opportunities of observing him. Many and many an evening have I seen one, sometimes two, about the hedgerows busily at work with their noses poking about for worms, grubs, &c., and one peculiar fact is they know no fear. You cannot frighten them by noises or by your presence; it is only by touching them you can cause them to curl up. They seem to have no idea of running, and rely for defence on their prickly skins. One of the correspondents to the Journal mentions that they climb; this I have never known them to do, but as regards eggs on the ground they are sad fellows. Only last year I had a hen sitting near a wood, when I found the eggs began disappearing. On examination of part of a shell I distinctly saw the marks of teeth that would be like those made by a hedgehog; a trap was set and a very large hedgehog was caught. He was taken some distance and turned loose in the wood, and no more eggs were lost. For a walled-in garden I think this animal is most useful. I have often kept them so and found them become quite tame, coming regularly to the back door to be fed. They are also useful when wild, as I before stated, as they destroy a vast quantity of noxious insects, worms, grubs, &c., and my belief is that they do much more good than harm; therefore I think they ought to be spared as much as possible excepting in the poultry yard.—HARRISON WEBB, *Weirleigh, Breckley, Kent.*

CHANGING SEED.

MISAPPREHENSION exists upon the subject of changing seed, with a view to increasing the yield, and preventing degeneration from successive plantings or sowings on the same land.

It has come to be generally recognised that certain varieties of grain and root crops, especially Potatoes, will do better in one soil, situation, or condition than another; some varieties will grow on wetter, or poorer, or colder, lighter or heavier land than will other varieties of the same cereal or tuber. For instance, the Peachblow Potato requires more uniform conditions of coolness and moisture than many other varieties. This rule will apply measurably to all other crops. Hence, from the failure to study the characteristics and peculiar requirements of cultivated plants, the idea has become almost universally prevalent that periodical and frequent changes of seed is absolutely necessary; and that the change should be made from a soil, situation, and climate essentially different from that upon which the crop is intended to be grown. The real fact is, however, that in a change of seed more attention should be paid to procuring varieties adapted to the soil and climate where the variety is to be cultivated, than anything else. Hence, if any given product is found under good cultivation constantly to deteriorate in a locality, it should be discarded, and those varieties selected that are found to do well upon a similar soil and situation.

The Early Rose Potato is another noteworthy example of a variety that does well on a great range of soils, yet will be good, indifferent, or bad in yield or quality according to the soil upon which they are grown and the conditions under which they are cultivated. Some plants will not grow at all except in particular soils and aspects. Hence in changing seed the grower has not only to study the conditions necessary to the growth of a given variety, but also their adaptation to his own soil. In the selection of seeds, varieties adapted to a soil and climate must be used, and the seed should have been grown on a soil calculated to produce the variety in its best state. When varieties are obtained that under good cultivation hold their high characters even measurably, retain them until by careful experimentation or certain information another is found which will be better.

Last season Potatoes, as a rule, were a failure. It will be well to procure new seed from those sources where the crop has been raised in an entirely healthy state; thus again getting a start with perfectly sound seed, containing all the elements of nutrition for the future plant in the highest degree. The same rule will apply to any other seed it may be necessary to buy. The extra charge, if any, that this will entail, will be money

well invested. If, however, your own seed be satisfactory, do not change from any incorrect idea that plants as a matter of course run out from having been raised on the same land for a number of years.

Indifferent cultivation causes deterioration of products to a greater degree than all other causes combined. If unsited to the soil plants will deteriorate, and new seed should be obtained from localities where the characteristics are retained. If you have these already secured hold fast to them in preference to risking seed from some other place. Experiment with all and every variety you please. This is one test of the intelligent and successful farmer; but do not throw away that which is good until you get something better.—(*Prairie Farmer*.)

CHAPTERS ON INSECTS FOR GARDENERS.

No. 17.

The idea must sometimes have occurred to the reflective gardener that the largest insects are not always the most troublesome, that, indeed, if we were to make a statement on the subject it would rather take the opposite form, since many of our prolific and pertinacious foes are diminutive, though often very agile. To some who are ignorant of natural history the first remark on their being shown either a moth or a caterpillar belonging to the Hawk Moth division, that we have next to consider, is one implying the estimate they form of the destructive powers of such creatures. Looking at the insects individually (at least in the larva state) such observers may often be right, but considered collectively these insects rarely appear in gardens in sufficient numbers to cause damage. Mr. Wood certainly does seem to think the "Eyed" and "Poplar" Hawks (*Smerinthus Ocellatus* and *Populi*) may be destructive in gardens—I suppose he means by their feeding on fruit trees, which is, however, an infrequent circumstance, though I once saw the larva of *S. Populi* in sufficient force to spoil the appearance of a row of Poplar saplings. The pacific character of the huge and formidable-looking larvae of this family is in marked contrast with the irritable displays we notice in various species of the smaller Lepidoptera.

Some of the older naturalists spoke of these Hawk Moths as distinguished from their brethren in this order by their time of flight, and so they called them the "Twilight Flyers;" but really, although certain species have a taste for the "witching hour of eve" when they hover around our flower beds like diminutive ghosts, their eyes twinkling with a light that is perhaps of a phosphorescent nature, there are also species which prefer to fly in the clear sunshine, and others that are so sluggish in habit that after being about for a short period during the day, twilight finds them with a propensity to slumber. Curious, again, was the fancy of the Swedish naturalist *Linnaeus*, who saw in the attitude of the larvae of some species a resemblance to the Egyptian *Sphinx*, and hence applied a name to them which is still used in its Latin form; also he regarded them as intermediate between the butterflies and moths. The phrase "Hawk Moth" happily expresses the swooping flight so notable in some species, yet others there are which glide along in quite an unhawk-like fashion. At the top of our list in size comes the species which may well be termed the monarch of British moths, and which rejoices in the solemn name of *Acherontia Atropos*. No one who has once seen a Death's-head Moth could fail to recognise it thereafter; but it seems scarcely credible in this age of progress that such an insect should be viewed with apprehension by a rustic; yet the fact is well authenticated, and it is doubtless partly due to the marks that are exhibited on the thorax and partly to the peculiar squeak the moth can make when annoyed or alarmed. In some districts the caterpillar is called a "Jokus," a misnomer rather ludicrous when its habits are considered as well as its form; for though at the time it is near maturity one of these can "put away" a good many leaves, yet in Potato fields the insects are never abundant enough to do damage. If feeding on the Privet or the Jasmine, as it occasionally will, the caterpillar leaves more signs of its presence, though like its relative next to be referred to, it is in the habit of concealing itself during the day.

The *Convolvulus Hawk Moth* (*Sphinx Convolvuli*), not quite so large as the preceding, is still scarcer in most years, though now and then there is a season when specimens occur all over these islands, even in the vicinity of London. The moth seeks the attractions offered by the exotics in our gardens, having a remarkably long proboscis, therein differing from *A. Atropos*, which, having a short thick trunk, is driven to the

expedient of robbing bees, and (perhaps) sipping the juice of over-ripe fruit. As the caterpillar of *S. Convolvuli* is invariably found on the wild species of *Convolvulus* it is no enemy to horticulture, but ever esteemed a prize by the entomologist who may pounce upon it. No better illustration of the Hawk Moth family can be given than that furnished by the handsome moth and caterpillar of the species receiving its name from the Privet, *S. Lignstri*. The body of the moth, with its pink and black bands, is bulky, but the powerful grey-brown fore wings, studded by the lighter-coloured hind wings, can carry the insect with rapidity through the air. Seldom is the young caterpillar observed, owing to its keeping low down amongst the twigs; gaining courage as it increases in size it suns itself full in view, the purple and white stripes being most recognisable at that stage on the pale green ground colour. These oblique stripes, seven in number, are a singular characteristic of the large Hawk Moth caterpillars; sometimes they are only faintly defined, the darkest being generally the stripe that extends along the anal horn, which is another adornment peculiar to the family, and which has, so far as I can see, no purpose, offensive, defensive, or nutritive. The three *Smerinthi* have strong resemblances to each other, but the Eyed Hawk (*S. Ocellatus*) has eye-like markings on the lower wings, thus occupying a position unique amongst British moths. In the caterpillar state, however, it is so similar to that of *S. Populi* that they may be mistaken for each other, though *S. Populi* is more yellow in hue, while *S. Ocellatus* exhibits a horn that is of a bluish tint. Both feed on Poplar, Willow, and now and then on the Apple or Pear; it has been asserted that the caterpillar of *S. Populi* has been observed eating the uninviting leaves of the Laurel and Laurustinus. The third species, *S. Tiliæ*, frequents the Lime sometimes, but more commonly it occurs upon the Elm, and this, in the caterpillar state, is quite distinguished by a curious plate (or, as it has been called, an "scutcheon") which it bears on the back, besides the anal horn. This is the least abundant of the three *Smerinthi*; and as the female moths of all deposit a goodly number of eggs, their stationary condition may be attributed to the dying-off of many young caterpillars and the destruction committed amongst them by birds.

Passing by a few species of some local rarity we proceed to notice the Elephant Hawk Moth (*Cheroampa Elpenor*), a species in which we have a caterpillar with eyelike spots and a body tapering like an elephant's trunk; hence the English name that has been conferred upon it. Occasionally it is green, but more generally olive-brown. In taste it is rather eccentric, for it feeds on plants as dissimilar as the Willow Herbs, the Bedstraws, in gardens occasionally on the Vine (as reared by myself), also, it is said, on the *Fuchsia*; but it is not found to be productive of any serious injury, and the beautiful moth may be esteemed as not much less charming than some of the flowers about which it hovers, the olive-green of the wings and body being relieved by pink, brown, and black markings. Next of kin to the Elephant is the small Elephant (*C. Porcellus*), this pig-headed (?) species being more uncommon in most English counties, its habits leading it to prefer open places, as on chalk downs, rather than the vicinity of gardens. The Bedstraws afford food to the caterpillar, which is brown or green, black-spotted, and of all the Hawk Moth tribe the sole species without the anal horn.

Newspaper paragraphists have reason to view with thankfulness the Humming Bird Hawk Moth, for it has supplied various journals with the startling heading of "A Humming Bird in England!" The mistake on the part of some observers is excusable when we are told that those who have seen true humming birds have stated that, had they not been assured to the contrary, they could have supposed this moth as seen by them on the wing was the admired and lively creature which has enraptured poets and artists. Our moth, however, resembles the duller-coloured humming birds, for such there are besides those gorgeously plumed; and although, much in the manner of the bird, the moth flies during the daytime, during the evening it hums above the flower beds, having apparently a fancy for flying into rooms through open windows, after it has sipped the honey from the flowers against the walls. Is it possible that the humming sound this moth makes deters birds from seizing it? One peculiarity of the Humming Bird Hawk Moth is its capriciousness as to the times when it will exhibit itself on the wing, though its season of emergence from the pupa condition is in the autumn. Individuals have been seen in almost every month of the year, implying that some hibernates in average years. But the caterpillar is only to be

detected during a short period in the summer, just when *Galium mollis* (one of the Bedstraws) is in its best condition, and before it dies down under the sultry heat or dry weather. In colour this esterpillar is variable; the horn is sharp and upright, while the sides, instead of stripes, have one straight white line. Formerly I have taken the species where I suspect it will never be found again—on marshy banks close to Kew. Near the same spot it is a tradition with London entomologists that "Elephant Hawks" used to be captured, settling on the flowers of the Ragged Robin.—J. R. S. C.

NEW BOOK.

Economic Entomology: APTERA. By ANDREW MURRAY, F.L.S. London: Chapman & Hall. 1877.

The collection at the Bethnal Green branch of the South Kensington Museum, which is intended to illustrate in a visible tangible way what is known as economic entomology is, to borrow a phrase from the late Edward Newman, "stretching out its fair proportions," and as it is to be accompanied by a series of handbooks, these in their amplitude must in some measure correspond with the objects they are to serve to indicate. If, as has been stated, economic entomology should include all the insects that are either useful, harmful, or in some way or other interesting to mankind, it is rather a difficult matter to fix our boundaries, and a host of insects might put in their claims to be represented (were they so inclined and capable), which have not yet been granted a place in the widest collection of this kind. It is possible that within the collection above referred to many insects have been allowed to take rank, the economic importance of which is questionable, however curious or even valuable they may be in the estimation of naturalists. For good reason, doubtless, the author of this portly volume in treating of the subject entered upon (for it would appear from the title page that he takes the whole series in hand of which this forms a part), has chosen to work upwards and not downwards. That is to say, instead of beginning with the beetles, which are deemed to exhibit insect life in its highest organism, he commences with the wingless forms classed under the head of APTERA. We venture to predict that as he proceeds he will find it necessary to condense somewhat, and that his plan of treatment, admirable and almost exhaustive as it is, will hardly be able to be carried out throughout the volumes without unduly augmenting their size and number. Hence Mr. Murray begins with discussing myriapods, spiders, mites, and kindred species that in the estimation of many persons are not insects at all, but either to be located separately or set down as a group of the Crustaceans. Not so many years ago an editor of a journal in replying to a correspondent, could say that there was only one leading entomologist who considered spiders and mites were insects. We believe now that more entomologists have given their adhesion to this opinion, but most of the advocates of this classification are to be found amongst those who may claim to be good naturalists, yet who have not paid special attention to the habits and transformations of insects. To us the line of separation between most of the creatures included in Mr. Murray's book and the true insects appears well marked, even if structure alone were to be taken as the test. By the way, those lively insects, fleas, so near akin to the lice, that close this volume on APTERA, are not touched upon; possibly the author is one of those who regard them as degraded fleas.

Of the work in general it is only just to speak in terms of praise, and the numerous accompanying figures have been well selected and produced with correctness. The letterpress, while it is fully up to the level of modern science, does not assume an air of abstruseness, though here and there a word is used which seems to call for an explanation in a foot-note, unless one more simple could have been substituted. Some will, it may be, object to the intermingling of British and exotic species, but this could not well be avoided. Looking at the book from the gardener's point of view, we perceive that it informs him that the number of his foes in this division is more numerous than he would have supposed, though the injuries done by spiders, mites, and their allies, especially in frames and hothouses, have long been known or suspected. Fortunately, to a great extent, the ravages of some of these pests are frequently checked, either by the attacks of their peculiar enemies or from causes not so easily ascertained. Others, again, attack, and if they do not kill they serve to weaken, insects which are exceedingly troublesome in the garden or the house; thus *Scirus Insectorum* is a six-footed

mite that exists by sucking the vital fluids of the larvae of the Wireworms (Elaters), and also of several of the Tipulæ or Crane-flies. The minute scarlet-jacketed Trombidium parasiticum clings closely to the wings of the house fly, deriving nutriment from the veins. More useful still is such a species as *T. aurantiacum*, if it be true as is thought, that its especial food is the black aphid. In various species it is difficult to determine from their cautious habits whether the insects are friendly or hostile to the pursuits of horticulture. Thus the hard-shelled Beetle Mite (so-called from that integument), *Damans jenuiculatus*, was formerly noticed by Curtis as occurring in clustering masses on fruit trees near the base of the twigs, and he not unnaturally assumed that by sucking the sap they weakened in the spring those trees which are affected by them. The closer researches of Boisduval led him to conclude that the mites in question actually prey upon the eggs and larvae of thrips and of a lesser mite, and doubtless they themselves furnish food to other creatures in turn. Many of the mites are evidently qualified to feed both upon animal and vegetable substances: to decide, therefore, which is their primary or legitimate food is a matter of some nicety. The observation made by Murray at page 170, when referring to the history of the common bird tick (*Dermanyssus avium*), that there are well authenticated cases of these pests migrating from birds to those who come in contact with them, should lead those who keep poultry and cage birds to be more vigilant with regard to the extirpation of such parasites in so far as they can be dealt with by various applications, and, above all, by rigid cleanliness. Nor is it agreeable to be told that at least a case or two is on record where dysentery has been, with show of probability, ascribed to the breeding of cheese mites in the human stomach. It would be a capital thing if a lotion of infusion of tobacco, mentioned by Mr. Murray as highly efficacious in one instance of a skin affection caused by mites, were found available in other instances where the present modes of cure chiefly by the means of sulphur applications are tedious and even painful.

One of the best chapters in the book is that elucidating the history of the Gall-mites (Phytoptidae), from which we take a specimen paragraph. Our author is describing the manner in which they exhibit themselves on plants. He says:—"They attack plants in two different ways, one through the bud, the other through the leaves. Of the two, the former seems the most injurious. In spring the buds attacked are seen to languish and decay, or to assume a rounded swollen form without pushing out. On tearing a bud open hundreds of minute semi-transparent moving things may, by the help of a lens, be seen between the leaflets; these are the Phytopti, but it takes a good glass to see them at all. When it is the leaves that are attacked, the excrescences or galls of various kinds of which we have spoken are formed upon them. Sometimes the Phytopti are to be found in great numbers inside, and in that case the inner surface is free from hairs, unless, perhaps, a few stumps, and looks raw like a galled wound, like the surface of the leaflets in the bud, but more frequently no Phytopti are found in the galls."

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

Solanum acanthodes. *Nat. ord., Solanaceæ. Linn., Pentandria Monogynia.* Flowers pale blue-purple.—"This fine *Solanum* was for some years an ornament of the Palm-stove at Kew, but I am not certain of its origin; it bore the name of *S. acanthoalax*, *Klotzsch*; and as that author was keeper of the Royal Herbarium of Berlin at the time, it is probable that the plant was derived from the Berlin garden. It is not, however, the true *S. acanthoalax*, which is a Mozambique plant, described as having two-flowered peduncles which are densely aculeate. Its nearest ally is undoubtedly the *S. macranthum*, *Dunal* (DC. Prod. vol. xiii. pars. 2, p. 315), a native of the Amazons, of which there are fine specimens from Spruce in the herbarium at Kew, which differ in the broader, shorter, more rounded sinuately-lobed leaves, in the much larger buds and calyx, which and the pedicels are not at all or very rarely aculeate, not densely shortly setose as in our plants. The *S. macranthum* of this work again (t. 4138), and of the 'Revue Horticole' (1867, p. 132), is a very different plant, with the leaf-blade decurrent on the petiole, and is the *S. marionense*, *Poit.* I find no species out of the many hundred in the Kew herbarium, nor in the descriptions of *Dunal*, at all agreeing in this, of which I am obliged reluctantly to make a new species. The figure was made in August, 1863."—(*Bot. Mag.*, t. 6285.)

GONGORA PORTENTOSA. *Nat. ord., Orchidaceae. Linn., Gyn-andria Monandria.* Flowers pale flesh-coloured.—“The genus *Gongora* is rapidly being recruited with new species from tropical America, and especially the Andes. Only two are enumerated in Lindley's ‘Genera and Species of Orchideae;’ upwards of fifteen species are now known, and we have drawings of other unfigured ones. The present one is a native of Cundinamarca, in the province of Bogota, and was discovered by Mr. Wallis in 1868. It has been widely distributed by M. Linden, and the specimen here figured flowered with Mr. Bull of Chelsea in April, 1874.”—(*Ibid.*, t. 6284.)

BORONIA ELATOR.—*Nat. ord., Rutaceae. Linn., Octandria Monogynia.*—“Belonging to a small group of the extensiva genus with dimorphic anthers and enormously large stigmas, which is confined to Western Australia. Though a very distinct species it is a variable one, especially in the amount of pubescence, which is almost absent or so copious that the branches are almost hirsute with soft-spreading hairs. Its neat habit and abundance of red-brown flowers, which in well-grown species completely hide one side of the branch, render it well worthy of cultivation, as, indeed, are almost all the species of this genus. Nearly fifty species of *Boronia* are known; they inhabit heathy and rocky places in Australia, and with the various *Epacridae* and *Tetrathecae*, &c., form one of the most beautiful features of the scenery. About fifteen species have been raised and figured in England, but it would be difficult to find half of them now, so entirely has the cultivation of Australian plants been superseded by easier-grown softwooded things.”—(*Ibid.*, t. 6285.)

PECTIS ANGUSTIFOLIA. *Nat. ord., Compositae.*—“A very pretty annual, forming dense green cushions in its native country, from the excessively branched oorymbos habit of the plants which grow close together, and the abundance of flowering heads that open at the same time. It was found by all the early travellers in New Mexico, that Colorado district, &c., as by James, Coulter, Gregg, as well as by the later travellers, as Fremont, Wright, Fendler, &c.; and it was introduced into cultivation by Mr. Thompson of Ipswich in 1865, who sent specimens in that year to Kew.”—(*Ibid.*, t. 6286.)

CAMASSIA ESCULENTA var. LEICHTLINII. *Nat. ord., Liliaceae. Linn., Hexandria Monogynia.*—“It was discovered by Mr. John Jeffrey in British Columbia in 1853. As a garden plant my first knowledge of it was derived from our indefatigable correspondent, Max Leichtlin, Esq. The present sketch was taken from a plant which flowered on the rocky in Kew Gardens in May, 1873. The ordinary colour of the flowers of *C. esculenta* and of *C. Fraseri*, its representative in the Eastern States, is blue, but in all the specimens which I have seen of the present plant the flowers are white.”—(*Ibid.*, t. 6287.)

NOTES ON VILLA AND SUBURBAN GARDENING.

AFTER the heavy rainfall of the past eight days all lawns, verges, and gravel walks should have a good rolling with a heavy roller. The ground being in such a moist condition this rolling will prove highly beneficial, and will consolidate the walks, and improve the turf for the season. All grass edges may now be neatly trimmed, and with the milder weather the grass will require mowing often. The pruning of Roses should be completed without further delay. Amateurs can do such work more easily and expeditiously with a pair of secateurs than with an ordinary pruning knife. Prune all Hybrid Perpetuals to two, three, or four eyes, according to the habit of the variety. In all cases cut the shoot back to a vigorous out-looking bud, care being taken to leave an open and evenly balanced head. All borders should be turned, and every part should have a fresh and clean appearance; in fact where operations are as farward as they ought to be the garden will begin assuming a spring-like appearance, for the deciduous trees are fast peeping into leaf, and ere many days elapse residents in the southern counties may hope to hear the sweet notes of the nightingale.

Most amateurs and others with limited glass structures find some difficulty in accommodating the many different plants required for summer display, and it is a good plan to turn the more hardy, such as Geraniums, out of doors. Many kinds of makebifts are extemporised to protect them during the night, for to-day may be moist and genial, to-morrow may be a cutting cold east wind, or frost may come while we sleep. If the plants are placed on ashes in beds 4 feet in width and a few stout sticks are bent over them and covered nightly with mats or sorim canvas, such plants will be rendered safe, and additional room will be afforded for more tender subjects requiring a warmer structure. It is important now to ascertain whether there are a sufficient number of plants provided for the purpose required, for during this month a large quantity of Alternan-

theras, *Pétunias*, *Lobelias*, *Verbenas*, *Mesembryanthemums*, &c., can be struck with the aid of the genial heat of a dung frame. Such a frame we consider one of the most necessary appliances to a villa garden, not only as a summer structure for growing to Cucumbers and the striking of seedlings, but for the raising of all tender seeds, such as Cockscombs, Balsams, Globe Amaranthus, and similar plants, which will vegetate readily if attention is given to applying fresh linings as the heat declines.

Chrysanthemums struck and potted-off will thrive excellently if placed outdoors on beds of ashes and protected as described. Ours have been out for nearly a fortnight, and the rains have been beneficial to them. It is a good plan to support the stems with small sticks; we use the prunings of Apple and Pear trees for this purpose. *Lachenalias* are useful plants at this season of the year, and are not so much grown as they deserve to be. A shelf in the cool house and plenty of water is all they now require. The many species and varieties of hardy Primulas are very attractive, and it is a good time to become acquainted with them while they are to be found in bloom, more especially *P. dentulata*, *P. fatioma*, and the varieties of *P. cornuoloides*. We saw a charming and lovely little species with white flowers at the last meeting at South Kensington named *P. nivalis*, quite an amateurs' plant. *Asters*, *Stocks*, *Larkspurs*, &c., may now be sown on a warm border or in frames, covering the seeds lightly.

Kitchen-garden work will be delayed for a time owing to the heavy rains, especially where the land is tenacious or heavy; but as soon as possible successions of Peas and Beans must be sown, also Radishes and salads of all kinds. The French Breakfast Radish is a favourite with us; it turns in quickly, is very small, and is much appreciated at table. Early Paris White Cabbage Lettuce turns in quickly if the seed is sown and the plants are grown on a warm border; but for a summer Lettuce Paris White Cos is our favourite. The ground will require stirring amongst Lettuces that have stood the winter, and if some are wanted early tie them together to blanch. All planting of Potatoes must be proceeded with as quickly as possible, and a small sowing of Turnips made. White Dutch and Red and White Stone are good sorts for early produce. The main crops of Carrots and Beet must now be sown. An useful early sort of Beet is the Egyptian Turnip-rooted. It must not be depended on for the main crop, but where salads are required this Beet is valuable. Dell's Crimson and Pine Apple Short-top are useful sorts for winter supply. Savoys, Kale, and Broccoli should be sown at once for a main crop; in fact, no time must be lost in the kitchen garden, for any chances thrown away in this department will not be regained throughout the season.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

MANY specimens of Pear and Plum trees are now in full blossom, and so far the weather has been such that it will set well if frost does not occur again, but our climate is so uncertain that no one can count upon a crop until the fruit is well set; indeed, even after this the young fruit may be hatched with frost, but on walls this will be avoided by letting down the protectors. Canvas screens may be used injudiciously to protect the blossoms; they will, if kept too close, especially on Apricot walls, cause the fruit to drop instead of setting, but of this there is not so much danger when the fruit is really formed. One evil to be feared, though, and that not a light one, is that the cooler warmer atmosphere causes green fly to increase more rapidly than it would on an open wall.

We have grafted some Apples. One tree of considerable size had been cut down before the sap began moving; a large number of grafts were put on to it, and in the course of a few years it will again be a full-sized tree in full bearing.

Caterpillars and all sorts of insect pests are now on the move, and steps should be taken to destroy them before they do much damage. The most destructive caterpillars are those of the *Bombyx nemoria* or Larkley Moth. They are easily destroyed, as they cluster together when they first emerge from the eggs. When in a more advanced stage they disperse over the trees, and it is then difficult to destroy them. An old writer says that the best way to keep this caterpillar from orchards is to “plant, according to the size of the orchard, from one to four trees of the Bird Cherry (*Cerasus padus*). All the moths in the neighbourhood will resort to those trees. The appearance of the Bird Cherry trees will be hideous, but the Apple trees will be safe.” Our plan is hand-picking as soon as the caterpillars are hatched.

The Apple maggot is very destructive, and has sometimes destroyed half our crop of Apples. We have fancied that by dusting the trees before the blossoms open with dry lime some good results have followed. The most effectual remedy is to destroy the fruit that has been attacked, and thus prevent the increase of the pest.

Aphis dry seasons does much damage to Plum trees. It can only be destroyed by attacking it in the early stages of its development, and the best way is to syringe the trees with

soapy water, to which has been added a little tobacco liquor. When this pest attacks wall trees it may be destroyed in the same way; but we have also seen it effectually disposed of by nailing some stout canvas to the top of the wall and allowing it to hang down to the ground, fumigating the trees underneath this screen the same as has been recommended for trees in houses.

It is not too late in the season to plant out Strawberry plants if runners can be had. When we obtain any weakly runners of new sorts in the winter they are always potted singly in small pots and planted out on well-prepared ground about this time or later, according to the state of the weather.

CUCUMBERS AND MELONS.

Cucumbers in the house are now bearing very freely. The plants were raised from seeds sown about new year's day. The true stock of Tender and True came first into bearing, and the fruit, though large, is very freely produced. As a rule large Cucumbers are not so freely produced, nor do they come in so quickly as the smaller-fruited varieties. There is now plenty of variety in the Cucumber family. The object of the raiser of new varieties ought not to be the production of mere size, but varieties with solid flesh and without any neck; the fruit should be of one thickness throughout. Our young plants have a tendency to produce too much leaf, and both the leaves and young growths require to be well thinned out. It is of great advantage to the plants when the soil has been thoroughly permeated with the roots to add some rich dressing to the surface, and as this becomes filled with roots to continue adding to it. Cucumbers in frames require very similar treatment to those trained to trellises in the houses—thinning-out the growths and training those that remain regularly over the surface of the bed, and keeping them in their places with stont pegs. Keen winds from the north and east find their way in at the open ventilators, and check the growth of the plants if the winds are not stopped in their progress by some gauze or hexagon netting hung over the apertures. The frames do not require much air at this early season, but when the sun shines at intervals during a cloudy day directly on the plants the temperature leaps up with a bound, and might injure the plants if there were not sufficient air on.

Melons require much the same treatment at this season, except that in the houses artificially heated the temperature may be lower, and less atmospheric moisture is requisite. A high temperature and much moisture in the atmosphere may produce rot in the plants to disease. There are new varieties of Melons annually introduced to the public through our enterprising seed firms, no doubt with the impression that they are improvements on old sorts, and some of them occasionally produce good fruit for a few seasons, but none of them are so generally grown in the scarlet flesh section as Scarlet Gem (Turner). We have also found Gilbert's Victory of Bath in the green flesh section to be a standard variety.

ORCHARD HOUSE.

We have not applied any artificial heat to the house this season. The frost has not been severe enough to do any harm since the trees came into flower, and the weather has not been unfavourable to the free setting of the fruit. Pears and Plums are later to flower, but most of them have the blossoms fully expanded, and it will be necessary to keep the atmosphere of the house as dry as possible, and admit as much air by day as the weather will permit, throwing the doors open also during fine days, and if the thermometer is not likely to fall below 35° a chink of air may be left on all night. Much care is necessary to see that the trees in pots do not suffer by want of water at the roots. We destroy brown scale by hand-washing with a sponge and soapy water, and if there are only a few aphides they may be removed in the same way, but it will be necessary to fumigate with tobacco when the fruit is set.

PLANT STOVE AND ORCHID HOUSES.

We continue potting any plants that require it, warming the potting material by placing it in the house near the hot-water pipes for a day or so. We do not pot large flowering plants at this season, but those intended to be grown into specimens are now potted with advantage. Many stove plants flower freely when of a small size, and even if they are intended for specimens they may be allowed to flower, unless the object in view is to grow the plants into a large size as quickly as possible, in which case the flower buds ought to be picked off. When the houses are small it is a mistake to grow large specimens, as they do not have such a good effect as those of a smaller size. Plants cannot be well grown when the house is full of overgrown specimens.

Eucharis amazonica succeeds best under liberal treatment. The plants ought not to be allowed to become pot-bound, as they do not flower so freely, nor are the flowers of such large size from stunted plants. Amaryllises in variety are now very showy, but the treatment they require is the reverse of that accorded to Eucharis. The bulbs ought to be potted in small pots, good turfy loam with a little decayed stable manure answers admirably for them.

We have repotted Palms large and small. Palms do not succeed so well in large pots as they do in those that appear small for the size of the plants, and when the pots are well filled with roots the plants may be placed in larger pots. We had some plants the roots of which were so thoroughly compacted together that we could not disentangle them without injuring the plants; they were therefore merely left as they were, and the fresh loam was forced firmly round the ball, and no doubt the roots will soon ramble into it.

Ventilation and shading require considerable attention. Atmospheric moisture is kept up by evaporation from the hot-water pipes and also from the damping of the walls and paths.

ORCHIDS.—Many species are now either in flower or throwing up their flower spikes. The climate in the cool house is such that anyone can visit the plants without feeling any inconvenience from a high moist atmosphere. Those obtained from the mountainous districts of New Grenada and the Andes of Peru luxuriate in a temperature of 50° at night at this season, and the Odontoglossums and Masdevallias grow more freely in pots when the sphagnum is in vigorous health on the surface. It is difficult to name any season as the best for potting. We generally shift into larger pots when the plants start into growth, and that is usually when the flowers decay. The pots are filled half full of clean potsherds, and over them some clean fresh sphagnum is placed, filling up with sphagnum and fibrous peat in equal proportions. A few bits of charcoal and potsherds added are of much benefit to the plants.

FLOWER GARDEN.

Bedding plants are being inured to the open air as much as possible by pulling off the lights and coverings whenever the weather is suitable. Recently struck cuttings of Verbenas and other free-growing plants, if they are not likely to be large enough, can be grown-on for a week or ten days longer in heat.

Auriculas will soon be in full beauty; the trusses are rapidly rising to bloom, and many are in flower. To preserve the bloom for as long a period as possible the plants are placed in a frame in a shady place, the back of the frame being turned to the south.

Carnations and Picoetes in pots are still sheltered with glass lights from too much cold rain. If all the plants are not potted they ought to be without delay.—J. DOULAS.

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*General Spring Catalogue.*

William Paul & Son, Waltham Cross, Herts.—*Spring Catalogue of New Roses, Phloxes, Geraniums, &c.*

TO CORRESPONDENTS.

* * All correspondences should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (C. Nielsen).—We know of no larger-sized work. There is much larger volume, Lindley's "Theory and Practice of Horticulture." (J. Anderson).—"The British Ferns," price 8s. 6d., and Hentrey's "Introduction to Botany."

VINE LEAVES (J. G. S.).—We do not detect any disease. The leaves are healthy, the drops are only moisture transpired, and what you call "web" is in the natural down on the under surface.

DENDROBIUM CARIFFIENSE.—The specimen exhibited at the Royal Horticultural Society on the 4th inst. was exhibited by Mr. J. Churchfield, gardener to H. Littleton, Esq., at Westwood House, West Hill, Sydenham.

INSECT IN HOTBED (J. H.).—If you send us specimens in a small box by post we will endeavour to identify the insect.

GARDEN ENGINE (Brookfields).—It was the invention of a clergyman near Bristol. We cannot say where it can be purchased.

TREES SOLD NOT TRUE TO NAME (*Trent Tree-planting*).—You will do a service to the public by suing the vendor in the County Court.

ACRUCULAS (F. E. G.).—"Florists' Flowers," published at our office. You can have it free by post if you enclose six postage stamps.

STRAWBERRY (*Market Gardener*).—There are too many varieties for us to be able to name yours from the flowers only. Send ripe fruit.

PLANTS INJURED DURING CONVEYANCE (G. C. E.).—Your remedy is against the carrier, unless you can show the plants were insufficiently packed.

MANURE FOR POTATOES (A New Subscriber).—As you cannot obtain stable manure, and as we neither know your soil nor locality, we cannot advise you. Decayed leaves or other vegetable rubbish, such as the bottom of a wood stack, are suitable for any soil.

BEAUTY OF GLAZENWOOD ROSE.—We have received from Mr. John Ferme Haddington, a flower of this Rose. Its petals are yellow at the base, with a coloured edge, and the colour is much brighter as bright as those in the published portraits, and the flower is much smaller.

PIT IN FRONT OF GREENHOUSE (Kittie).—The pit would be very useful for wintering bedding plants, but the lights should not be above, upon, or level with the gutter of the greenhouse, but beneath it, which will form a capping for the lights. This will, of course, give you less depth in the pit at the back. The front wall need not be higher than a foot, and the wall plate upon it will raise it 2 or 3 inches. The height or depth of the pit at the back need not be more than 24 feet. Two openings, one at each end of the front wall of the greenhouse, 2 feet square will not be sufficient to warm the atmosphere of the pit so as to exclude frost; the openings should be at least four, and even then you will need to cover the pit with mats in severe weather. We have a similar pit, and in severe weather double matting is necessary over the lights. It will depend entirely upon the number and size of the openings with the temperature of the house as to whether you will be able to exclude frost from the pit, but we think you will not be able to do so with two openings, and the temperature of the greenhouse an ordinary one—viz., 45° to 46° from the heat.

CLAPPER MILL TO SCARE BIRDS (M. J. T.).—Any country carpenter can make it.

PLANTS FOR WINDOW BOX (Idem).—As the aspect is north plant the sides with *Sempervivum tectorum* and *californicum*, the centre with *Winter Heaths*, *Thajse*, and *Reticospora* kept dwarf.

BECONAS (East Surrey).—We cannot name "plants from leaves" only, nor forests' flowers at all, they are legion.

BROWN SCALE ON PEANES (G. Hollings).—Frogs are very susceptible of injury from an insecticide which with water at a temperature of 140°, but the frosts must be fully developed, any young tender growth being unable to endure the water at so high a temperature. The plants should be laid on their sides and turned over so as to reach all the insects with the hot water, being careful to keep it from the roots. A tedious but a safe mode of riddance is to remove the scale with the point of a knife, crushing it between the finger and thumb. The brown powder beneath the skins corresponds to insects, as numerous as its grains appear to be. The plants should be gone over frequently, and the scale removed before it becomes brown and hard.

FEATHER GRASS FLOWERS (T. Gardner).—It is perfectly hardy, and does not require to be sown in heat, though gentle heat brings the plants up quickly. Prepare a bed or piece of ground in an open situation by digging, and making very fine, especially the surface. If poor add some leaf soil; if heavy, sand. The surface being fine, water gently. Scatter the seed evenly and rather thickly, and cover it very lightly with fine soil. All that is needed is to maintain the seed in position. If the weather be showery, no water need be given, but if dry shade from sun and sprinkle with water every morning, applying it through a fine rose. After the blades appear all that is necessary is occasional watering in dry weather. Grasses often fail from seed being buried too deep, and keeping moist, so as to ensure speedy germination.

FLY IN VINEYARD (Ja. Dublin).—The fly is one of the several hundred species of Anthomyia, to which also belongs some of our common house flies. They will do no injury to your Vines, and will in all probability not propagate in the spent sawdust laid over your Vine border.—L. O. W.

PEACH TREE NOT SETTING ITS FRUIT (G. C. O.).—Is the tree well exposed to light and air? If so there is no reason why the fruit should not set as well as that on other trees. Rivers's early York usually sets well. Try artificial setting with pollen from another tree next year. It is easily done with a camel-hair brush.

PEACH AND NECTARINE BLOSSOM NOT SETTING (S. H. C.).—It is extremely difficult to account for the two Peach and one Nectarine trees not setting, whilst another tree in the same house has "set beautifully." The cause is probably due to an imperfect development of the buds in embryo during the previous year. Some kinds of Peach and Nectarine trees are much more subject to the defect in setting than others. The most certain setting of Peaches is Royal George, and the best setting Nectarine is Elruge—the finest of all Peaches and Nectarines respectively for forcing. Grosse Mignonne, one of the finest of Peaches for any purpose, and Noblesse are good setting sorts, but they cannot endure dryness at the roots, attacks of red spider, or overcropping without giving way to barrenness for a time in order to resuscitate their wasted energies. We had this year the finest blossom conceivable upon a Nectarine tree, many flowers having the stamens set in order into petals, very beautiful, but not a flower has set—they had no ovaries. The small-flowered kinds are usually the best setters.

NAMES OF PLANTS (C. F. T.).—The *Azalea* is a form with variegated leaves of *Madame Mielzel*, but we could not be quite sure of it, as there are so many varieties. (*A. Campbell*).—The *Rhododendron* sent is ascending form of *R. Dalmatianum*. We could not judge of its value from a single branch with a couple of flowers. (*C. Seymour*).—*Triteileia* uniflora.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE DANGERS OF BIRDS.

Our attention has been called to the columns of a contemporary, where we read that among all the many perils to which our wild birds are subject, the network of telegraph wires, which are everywhere to be found, bear an important part. While we most assuredly lament to find that many beautiful species are rapidly becoming scarce, and that the dangers to which our feathered tribes are subject are very considerable,

still we have good reasons for knowing that the telegraph wires do not do now one-tenth of the damage that they did twenty years ago. In those times the wires were comparatively few, and only one or two were seen along the sides of the railway; but to-day there are in most places very many more, and along most lines we see a very large number. The birds are able to see these, while they did not notice a single wire or even two wires, and we have are more able now to avoid flying against telegraph wires. We have made inquiries, and are well able to substantiate what we say.

Of all birds we find that Partridges were most frequently the victims, and we will mention one or two cases which we know to be true of this bird alone. On the L. and S. W. R. on eight and a half miles of line within one season three of the Company's servants picked up 361 Partridges. It hardly seems credible, but it is a fact, and they were picked up in the following numbers. We will call the three men A, B, C, and of them A picked up 77, B 84, C 200. In one morning alone A picked up 15 Partridges and 32 Larks on half a mile only of road. This was in the first year in which the wires were put up, and there were then only two of them. We have only spoken of Partridges. Other birds in nearly the same proportion fell victims, Larks especially; Owls, too, and Hawks, and many other rare birds. We can well imagine the slaughter when there were but one or two wires on the great and longest lines, when we consider that within eight and a half miles 361 Partridges alone fell victims in one season; but now since the wires have been so extensively increased in numbers the average number picked up in a season is five or ten along the same quantity of road. Among the many means, then, which there are of lessening our feathered friends, we can hardly say that the telegraph wires are an increasing danger. Among the many birds which have met their death by these means we can find no recorded instance of a Rook or a Crow having been picked up.

We hear, too, at Berlin a wholesale destruction has been going on, by all birds which passed within a certain distance of the engines connected with the pneumatic post being sucked in and vanishing from sight, appearing again no more. We understand that the Society for the Protection of Birds in Germany have addressed a memorial to the postmaster to have this matter inquired into. Dreadful as this must have been, and we suppose still is, yet we feel that the extinction and destruction of so many of our species of feathered friends is not due to the fact that they can fly to a safer home, and without difficulty trace the chief mischief. Bird-catchers ally forth from London and other large towns with nets and appliances, and catch in wholesale numbers anything they can. Many of their captives die at once, others pine away in their own or in the cages of foolish purchasers who buy them, supposing they have been accustomed to cage life. It is grievous to go into some places and find bird life so scarce. We have such a place in our mind now, where Blackbirds are few and Thrushes too, and as for Goldfinches and Bullfinches, they are almost unknown. About four miles off is a large town, and a regular gang make a living by taking young Blackbirds and Thrushes from their nests, and catching anything they can to sell for cages and aviaries. It is the great number that die before they are tamed which makes this system so obnoxious, for if all the birds which are caught only lived to go into aviaries we should imagine that an aviary was as necessary an appendage to every establishment as is a front door. And then the rarer birds! If one appears in a neighbourhood, some idiot (for he can be called nothing better) immediately writes to the county papers in this way—"It may interest your readers to hear that a Golden Oriole (or a Bustard, or whatever it may be) was seen yesterday in the Dashborough Woods. From its movements I should think there were a pair, and that they probably are nesting." Out rosh the interested readers with pistols and guns, and cease not till another Golden Oriole or rare bird is numbered with the past, and one more specimen of a rare breed in England is sent to a bad bird-stuffer to be set up as a trophy of prowess. How much better would it be if the fact was merely mentioned to one or two reliable persons, who might be able to substantiate the case in after days, and then when the breeding season was over allow the "interested readers" to hear how few more specimens of our wonderful feathered creation had been bold enough to give its species one more chance of establishing itself in our British Isles?

In back numbers of this Journal we find recorded instances of the Bustard being seen in Wiltshire; but the dwellers on Salisbury Plain, what did they do? They heard of the bird, and as if it had been a lion seeking to devastate their homes, they went out to murder this magnificent creature, and then sent the corpse to adorn some local museum. The Northamptonshire people are wiser surely than those of Wilt, for when a male Bustard was found in their locality, instead of setting forth to slay it they let it be, and the head of a noble family famed for his love for and collection of the feathered race procured a hen bird and let it loose in the marshes to try and acclimatise the breed.

Let us from him learn the lesson, and seek one and all rather to domesticate by kindness those birds which appear to be scarce, so as to allow all men to see the rarer birds in their feathers alive rather than for a privileged few to enjoy looking at the specimen stuffed and set up in a private collection.—W.

NATIONAL POULTRY AND PIGEON CLUB.

ACCORDING to promise I now send you the list of names selected to form the preliminary Committee for a National Poultry and Pigeon Club, and I hope in the course of a few months we shall be prepared to offer to every breeder and exhibitor something of real benefit, whereby we may all have some definite appeal in case of need. As at present no line is decided upon, it would be of real help if one and all interested in poultry and Pigeons would kindly send me word what amount of subscription they think would be best, as it is for the benefit of all we act.—HORACE LINGWOOD, *Creeting, Needham Market, Suffolk.*

Proposed Committee: The Hon. and Rev. F. Dutton, O. E. Cresswell, Esq., Samuel Matthew, Esq., A. Bailie Hamilton, Esq., Joseph Hinton, Esq., Col. F. C. Haseard, C.B., T. C. Burnell, Esq., R. E. Horsfall, Esq., Rev. Hans F. Hamilton, Alfred Darby, Esq., F. E. Manby, Esq., Rev. W. Serjeantson, Dr. Snell, R. A. Boissier, Esq., Charles Sidgwick, Esq., Edwin Pritchard, Esq., Horace Lingwood.

GEESE AND THEIR MANAGEMENT.

AMONG a majority of our fanciers the care and management of Geese is an unknown art. It is thought to be a very troublesome and expensive business, with no corresponding return for the outlay. Numerous inquiries have led us to present the subject to our readers.

It is a prevailing opinion that the droppings of Geese poison and kill the grass; and a very erroneous one it is, as a little observation will prove. The village green—the pasture ground of numerous flocks of Geese year after year—when has it, in the memory of our oldest readers, been ploughed up and re-seeded? And still every spring the grass comes up fresh and thick, and after every rain it will freshen up, when, over the fence, some farmer's field of timothy will appear all withered from the drought; while the latter probably does not carry one-quarter the stock that is yearly pastured on the commons.

Geese are close feeders and bite the grass off short to the ground, which gives the pasture a dead appearance; but remove the Geese, and the grass immediately starts up fine and thick, and a most beautiful lawn-like sward is soon apparent. It will not, however, do to let them run upon grass fields. The close cropping will soon destroy the life of the plants.

In keeping Geese do not allow more than four or five Geese to one gander. A house or pen in the poultry house or some outbuilding for this number should be about 8 or 10 feet square. Nests should be provided not less than 2 feet square, and an abundance of straw in them. Old barrels laid on the side and blocked to prevent rolling answer a very good purpose, but do not look as well as a good box prepared specially for them. There should be a box provided for every Goose, for they rarely share each other's nest. The eggs should be gathered daily and kept in a moderately warm room, set on and either in bran or sawdust. It used to be customary among the farmers' wives to put the eggs carefully away packed in cotton batting until wanted for sitting.

The eggs should be set in March, or early in April; the earlier the better. The young should be well along by the time hot weather commences, as they do not thrive if hatched late in the season.

The time of incubation is from thirty to thirty-five days. The eggs usually do best if set under the Goose, although many breeders have very good success with hens. Food and water must be kept within reach of the Geese, else she will eat her eggs. Do not disturb her while hatching, but leave the goslings in the nest until twenty-four hours old.

Keep the young out of the water until fully a month old; and during this time feed on small grains or cracked corn. Many breeders feed scalded oatmeal, or Indian meal, the first three or four days, but it does not seem to be essential. They must have a grass plot or meadow for a run, for the greater part of their food is of grass and vegetable growth. Keep them out of severe rains until they are fledged, and do not allow them to swim until two weeks old; but keep plenty of fresh water (rain or pond water is best) by them to drink. It is best to feed morning and night; many do not feed them at all during the grass season, but if heavy weight and good size are wanted they must have grain every day.

It is not necessary to keep the gander away from the sitting Geese. He frequently will endeavour to share their labours, and when the young are hatched he proves a most vigilant protector and defender of them against all invaders.

As to varieties, we have a good number to choose from. The Embden or Bremen, the Toulouse, the White and Grey China,

and the Wild or Canadian Goose, being the best and most popular kinds. The Bremen Goose is pure white throughout, with yellow legs and bill, and of very large size; its feathers are consequently of greater value than other varieties. The Toulouse is grey, and rivals the Embden in size. At the English poultry exhibitions the former have been shown weighing 55 lbs. 4 ozs. per pair, while the Embden exceeded this, weighing 59 lbs. 2 ozs. These are probably the heaviest weights on record. The China Geese, both grey and white, are reputed better layers than either of the preceding varieties, but do not attain much over half the weight.

The wild Goose is a poor layer, and seems to be more profitable when crossed with some other variety. For table qualities the latter is said by connoisseurs to be unsurpassed; but their poor laying qualities and small size render them far less profitable than other kinds.

The Embden—which derived their name from the first pair having been procured from the city of that name—were first introduced into the United States about 1820 by Col. Samuel Jacques of Boston, Mass. They are as hardy and as easily reared as the other varieties, while their great size and beautiful Swan-like appearance make them a very favourite variety.—(*American Pet-Stock Bulletin.*)

QUERIES FOR APIARIANS.

Do bees sleep? If they do, how or in what position? When? Is it by night or by day? Or do some sleep at night and some during the day? Where or in what part of their habitations? How long do they generally sleep at a time? Do bees sleep or rest in winter? If they do sleep in winter part of their time, when and how long? Is the dormant or quiet state of bees in winter normal or abnormal? Is it beneficial or otherwise? Is the dormancy or rest of winter a necessity of nature, or is it caused by the coldness of the atmosphere? Do bees rest or work at night? Do they make honey as well as wax from the sweet juice found in the nectary of flowers?

This little cluster of questions is here presented to your readers with the hope that some of the most able of them will let us know what they ken about bees sleeping, &c. Though the questions are of little importance to practical apiarians, they may interest those who study the habits of bees. Perhaps no other question in the natural history of bees has received less attention than that of sleep, and perhaps no other question in their history is more difficult to answer. Two years ago an English baronet and M.P. read an interesting lecture to a philosophical institution on the habits of bees and insects. In this lecture he said that he had failed to discover any evidence that bees possessed the sense of hearing. He could not make them pay any attention to the sound of a fiddle and other instruments. He thought they were dead to sound. Probably he has now found that their sense of hearing is very acute and useful, and it is so most certainly. I should be pleased if Sir John Lubbock would turn his attention to the question of sleep, and let the world know the conclusion he may arrive at, for I have no settled opinion on it, and therefore dare not make any positive assertion one way or the other.

Analogical reason would lead us to believe that bees sleep. Birds and other insects (for instance, the house fly) go to roost and sleep. In my researches for sleeping bees I have been very unsuccessful. Every effort made in summer and winter—by night and by day—has failed to find bees asleep. I have had umbocomb or leaf hives with glass sides, in which every bee could be seen, and which afforded facilities for witnessing the internal operations of the bees. At night I have taken the shutters down and examined the bees by candlelight, but never found a bee napping. Perhaps they are light sleepers and easily disturbed.

Many things have to be remembered in considering this question of sleep. I will suggest a few of them.

1. That, so far as light goes, it is always darkness and night in a bee hive; and all the internal operations of bees are performed in the dark.

2. That the queen of the hive in the busy season—say for four or five months—lays about or above two thousand eggs every twenty-four hours. This is exhausting work. If hard work calls for rest the queen (of all in the hive) has the first and greatest claim to it. When does she sleep? Does she cease dropping eggs at any period during the twenty-four hours? On the supposition that she does not rest she lays at the rate of more than 80 eggs every hour, and on the supposition that she rests eight hours every day she lays at the rate of 125 eggs every hour. Has she power to distribute and set unaided by working bees so many eggs? My opinion has been given on this point more than once in these columns.

3. That young queens often continue piping for a week, night and day. On reaching maturity, some before they are one day old, and some before they are out of their cells, commence piping, being bent on killing one another. This piping generally continues three days and nights, but when weather pro-

vents swarming it may continue for six or seven days. The question now comes up, if these infantile queens can pipe for a week without sleep, cannot more aged bees do their work too for a week without sleep? And if they can go one week can they not go longer?

4. That a very great amount of indoor work is performed during the night by bees. Comb-building, brood-nursing, and honey-storing, &c., go on at night as well as day. Though one or two correspondents at present disbelieve the fact (or statement of fact) that bees reswallow honey and thus convert it into honey proper, I am certain that they will yet alter their opinion on this point. Every bee-keeper may easily see the crude honey as it is gathered from flowers in the centre or brood combs of their hives on turning them after a good day's work. It literally glitters in them, and runs out of the cells on holding the hives aslant. It is easily caught on sheets of paper on the evenings of honey days. In uncombed hives the honey may be seen in the centre and bottom part of their combs every evening. I have seen this crude honey in cells half formed on the points of combs a thousand times. It is generally all removed during the night, and the centre combs are found dry in the mornings after. The cargo is cast on deck during the day, and while we are sleeping in our cabins the best of it is removed and stowed elsewhere. Sometimes the cargo is so great that those on night shift fail to remove it all. What toil and industry is manifested! Is it sleepless?

In closing this letter I will repeat one of the questions in the cluster—viz., Is the dormant or quiet state of bees in winter normal or abnormal, beneficial or otherwise? Is it a necessity, or caused by climate? What happens in warm countries? Are bees torpid during any season?—A. PETTIGREW.

HIVES AND LIGURIAN BEES.

I DID not again intend troubling you on this matter, but "RENFREWISH BEE-KEEPER," after disposing of my chimney flues, cottage roof, &c., in a manner peculiar to himself, asks for the date of my visit to Mr. Woodbury, which I would give readily could I fix it exactly (I think it was in 1866 or 1867); still I fear it may only produce a fruitless discussion. I hope, however, that some good may come out of this "battle of hives," and that all common-sense bee-keepers will know the value of each and every hive, whatever be his object, and content himself with the bee capable of doing all he requires until it is proved beyond doubt that a better can be had.

It is cheering to see your able correspondent "B. & W." speak out plainly in favour of large straw skeps as the most suitable for cottagers. This gentleman writes, "I say, then, that Mr. Pettigrew's hives are Al for cottagers and for all persons who are content to obtain plenty of honey." I wish these words could be made to sound in the ear of every poor bee-keeper. What more can anyone want? for you can have super honey or the purest run honey in abundance if it is to be had at all.

Mr. J. Hunter says in your issue March 15th, speaking of timid people, "Straw skeps are the only hives they are equal to manage." I do not think a timid man would look well turning up an 18 or 20-inch straw hive weighing 80 or 90 lbs. which had just been deprived of a large super, wishing to drive the whole black living mass into an empty hive, and then perhaps to knock them into another full of comb, to place on the floorboard, and then turn the whole up into its place. I think the man who can do that cleverly and steadily will not lack nerve for any other operation connected with bee management.—W. J. C.

WINTERING OF BEES.

HAVING examined and cleaned the floorboards of my hives, as well as some of those of my neighbors and acquaintances, I will tell how they have withstood the past extremely wet and severe autumn and winter. First come nine in straw skeps well thatched with straw. These are all in fine condition, perfectly dry, and not very much lighter than they were in October, although many of them have seven leaves of comb well covered with bees. Other two wooden frame hives have not resisted the damp so well, although quilted, both being very wet on the floorboard, and up the sides to within an inch or two of the quilt; and a considerable number of the bees are dead among the mouldy portions of the comb. Other two wooden hives belonged to a friend, one being quilted, the other not. The quilted hive was in the same state as my own, very wet in bottom and sides; and the unquilted hive was wet at top and bottom, the bees being all dead and encased in a shroud of white mould.

I have come to the conclusion that our northern climate is too humid for wintering bees in wooden hives. I have, however, brought these same hives through seven winters, and they have never been nearly so bad with damp in any of the previous six years. One of the hives has in it, still useful, the brood combs that were built in July, 1869. The bees have done well all the time, and I do not intend removing them till I see how long bees can breed in the same comb. Sometimes an end comb has

been taken for honey, and pieces of the bottoms have rotted away with damp, but the brood nest has never been renewed.—GEORGE CAMPBELL, *Tillinamott, New Pitsligo (in Banffshire Journal).*

OUR LETTER BOX.

FEATHER-EATING FOWLS (*H. H.*).—Purge them well with castor oil, a table-spoonful at a time; give them lettuce to eat; feed sparingly, and let the food be ground oats. Let them have dust in their house, and rub the spots bare of feathers with compound sulphur ointment. They should have no food by them at any time, and be sparingly eared at each meal. They do not eat each other or their feathers because they are hungry, but because they are suffering from a vitiated appetite.

CREVE-COEUR FOWLS.—"T. N." asks where in the neighbourhood of Croydon Creve-Coeur fowls can be obtained.

BEEES ON CREES (*E. S.*).—The bees working on a box of crees are carrying in water for their brood. Though water would be scarce they prefer to gather it from certain places and plants. Our own bees have found it lately on a moss or dwarf saxifrage which edges one of our garden walks. Being close, not unlike crees thickly sown, it retains water for a considerable time.

STEWARTSON HIVES (*J. H. Eltringer*).—The outside measure, and length of frames, is 12½ inches, boxes 14 inches in width inside, consequently leaving a quarter of an inch space for passage of bees round on either side. I intend to describe shortly some of the principles on which these hives are managed.—A. RENFREWISH BEE-KEEPER.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.		Rain.		
	Barom. in H.S. Level.	Hygrom. in H.S. Level.	Direction of Wind.	Force of Wind.		Shade Temperature.	Radiation Temperature.
April.		Dry. Wet.		Temp. of Foot.	Max. Min.	In sun. On grass.	
We. 4	Inches.	deg. deg.	deg.	deg.	deg. deg.	deg. deg.	In.
Th. 5	29.52	53.0 45.0	S.E.	47.7	61.0 56.6	102.7 47.1	0.412
Fr. 6	29.55	48.0 45.5	S.	46.6	61.4 61.4	90.7 87.2	0.383
Fri. 7	29.40	50.1 45.5	S.W.	46.0	65.6 61.8	99.6 87.6	0.061
Sat. 8	29.55	50.5 45.5	S.W.	46.5	65.6 61.8	99.6 87.6	—
Sun. 9	29.64	50.2 47.7	S.	44.5	65.0 62.2	76.0 89.8	0.487
Mo. 9	29.57	48.5 45.5	S.W.	46.0	66.7 62.9	71.8 46.1	0.450
Tu. 10	29.57	50.2 48.4	N.W.	47.1	69.6 67.6	89.5 47.0	—
Means.	29.476	49.9 48.2		46.1	57.4 44.0	89.5 47.0	1.698

REMARKS.

- 4th.—Very fine early, rather less bright at 9 A.M., but fair till noon, then cloudy and a severe cold easterly from 3 to 4 P.M., lightning very vivid; fair but windy after.
- 5th.—Fine early, but soon becoming showery, and so continuing all day, with gleams between.
- 6th.—Rain early, but less at 9; slight shower about 11 A.M. and again at 4 P.M., but pleasant and fine between; another shower about 6, but fine night.
- 7th.—A regular April day of sunshine and showers, and very pleasant between.
- 8th.—Fair but not bright till 1 P.M., then slight showers; very heavy rain at 2 P.M.
- 9th.—Intensely dark (though not very thick) for a short time at 8.30, cleared by 9; fair but dull after; rain from 9 P.M. nearly all night.
- 10th.—Rain in early morning, but fair before 9 A.M., and followed by a very pleasant day and starlit night.

Mean temperature rising slightly except in the sun max., which is slightly lower than last week from the great prevalence of cloud.—G. J. SYMONS.

COVENT GARDEN MARKET.—APRIL 11.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	6 to 7	Nectarinee.....	dozen	0 10 to 0 10
Apricots.....	dozen	0 0 0	Oranges.....	dozen	0 10 to 0 12
Cherries.....	bushel	0 0 0	Peaches.....	dozen	0 0 0
Chestnuts.....	dozen	0 0 0	Pears.....	dozen	0 0 0
Black.....	dozen	0 0 0	Pears.....	dozen	0 0 0
Figs.....	dozen	0 0 0	Pine Apples.....	lb.	2 6 to 6 0
Filberts.....	dozen	0 0 0	Quinces.....	bushel	0 0 0
Cob.....	lb.	1 0 1	Quinces.....	bushel	0 0 0
Gooseberries.....	quart	0 0 0	Raspberries.....	lb.	0 0 0
Grapes, hothouse.....	dozen	1 5 0	Strawberries.....	doz.	6 1 0
Lemons.....	100	6 10 0	Walnuts.....	bushel	6 0 0
Melons.....	each	0 0 0	ditto.....	dozen	1 9 2 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	0 10 0	Mashrooms.....	pot	4 10 0
Asparagus.....	dozen	0 10 0	Mustard & Cress.....	bunch	0 2 4 0
Beans, Kidney.....	dozen	1 6 2	Onions.....	bushel	0 0 0
Beet, Red.....	dozen	1 6 0	Peas.....	quart	0 0 0
Broccoli.....	dozen	0 0 0	Peas.....	doz.	0 0 0
Brussels Sprouts.....	dozen	0 0 0	Peas.....	dozen	0 0 0
Cabbage.....	dozen	1 0 0	Peas.....	quart	0 0 0
Carrots.....	bunch	4 0 0	Peas.....	doz.	6 1 0
Capisium.....	dozen	1 6 0	Peas.....	bushel	6 4 0
Cauliflower.....	dozen	2 4 0	Peas.....	doz.	8 0 0
Celery.....	bunch	2 0 0	Peas.....	doz.	1 6 0
Cucumbers.....	each	0 1 0	Peas.....	doz.	6 1 0
Endive.....	dozen	1 0 0	Peas.....	doz.	1 6 0
Fennel.....	dozen	0 0 0	Peas.....	doz.	1 6 0
Garlic.....	lb.	0 0 0	Peas.....	doz.	1 6 0
Herbs.....	bunch	0 0 0	Peas.....	doz.	1 6 0
Horseradish.....	dozen	1 0 0	Peas.....	doz.	1 6 0
Lettuce.....	dozen	1 0 0	Peas.....	doz.	1 6 0
Leeks.....	bunch	4 0 0	Peas.....	doz.	1 6 0

WEEKLY CALENDAR.

Day of Month Week.		APRIL 19—25, 1877.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day	Month		Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	m. s.		
19	Th		Royal Society at 8 30 P.M.	58.9	35.0	46.9	4 57	7 1	8 16	1 21	6	0 58	109
20	F	Royal Institution at 8 P.M.	60.3	34.8	47.6	4 55	7 9	9 39	2 4	0	1 11	110
21	S		59.5	37.0	48.3	4 53	7 4	11 7	2 34	8	1 23	111
22	Sc	3 SUNDAY AFTER EASTER.	59.0	37.0	48.0	4 51	7 6	10 36	3 54	9	1 35	112
23	M	Royal Horticultural Society, 3.30 P.M.	59.0	36.4	47.7	4 49	7 8	2 2	3 16	10	1 47	113
24	Tu	Crystal Palace Auricular Show.	58.7	35.6	47.1	4 47	7 9	3 28	3 24	11	1 58	114
25	W		59.9	36.9	48.4	4 45	7 11	4 52	3 36	12	2 9	115

From observations taken near London during forty-three years, the average day temperature of the week is 59.3°; and its night temperature 36.1°.

PLANTING-OUT CAMELLIAS.



BELIEVE there are many more Camellias grown in pots than planted-out in beds; but they can be cultivated to much greater perfection in the latter than the former. There are many people who grow Camellias that have no means of planting them out, and it is the last thing I would ask them to do to give up Camellia-growing for that reason, but there are many who possess and do not avail themselves of the means of

planting-out. Where many Camellias are grown it is not advisable to plant them all out, as some are often wanted in pots for a variety of decorations in different parts; but where it is desired to have large healthy plants to supply almost an unlimited quantity of cut flowers over a long period there is nothing will secure this to such an extent as planting-out.

Many Camellias are planted-out in the conservatory here. They have bloomed exceedingly well this winter; very few buds have dropped, and the flowers have been massive. At certain seasons there is much church-decoration required. We cut blooms for this purpose from two plants—a red variety, and the old Double White (Alba plena), at Christmas, and have cut many ever since, the same plants furnishing abundance of blooms for the church again at Easter. Plants in pots would not have supplied flowers half that time.

No better time than the present could be chosen for planting-out Camellias. In most cases the plants have nearly done blooming, and the buds are just bursting into leaf. Planting is best done when growth is slightly begun, but at the same time to avoid a check growth must not be advanced too far—not more, in fact, than just the young leaves appearing. The first thing to be considered in planting is to secure sufficient room for the roots. In many greenhouses and conservatories there are centre beds or borders along the back of the house; these are generally from 1 to 3 feet in depth and much more in width, and no better place need be desired in which to plant them than such as this. Our border is little more than 3 feet wide and about the same in depth, and some of the plants in it are 10 feet high and proportionately bushy. From this it may be inferred that good plants may be grown with ordinary root accommodation. If the border is naturally porous at the bottom, nothing need be done in the way of adding drainage; but otherwise 3 inches of broken bricks must be placed at the bottom before putting in any soil. The kind of soil in which to grow Camellias is considered to be of great importance by some. My own opinion is, that it matters little what kind of soil they are grown in when once the roots get hold of it. Some of ours are growing luxuriantly in soil which resembles that in the kitchen-garden quarters—a great deal more than the continually recommended loam, peat, and sand. Plants in an unhealthy condition will recover quicker in a compost of this kind, but strong healthy plants will grow in any kind of soil. About

three-quarters loam and one-quarter peat makes a good mixture for them.

In all cases the soil should be made firm before digging-out the holes for the reception of the plants. In turning the plants out of the pots remove all the old drainage, and if the ball is matted with roots these must be disentangled as much as possible without breaking them. The roots must not be deeply buried in the soil, the top of the ball should not be more than 2 inches below the surface when the whole has been completed. Press the soil very firmly about the roots, and do not give any water for a fortnight or three weeks after planting. I find many plants including Camellias start into growth at the root much quicker in soil moderately dry than excessively wet; but although water is not given at the roots for some time after planting, it must be daily applied to the foliage through the syringe. This assists greatly in softening the buds, especially when they are a little shy in starting freely.

As to temperature and other matters relating to the atmosphere, the plants will succeed very well under the conditions of any ordinary greenhouse. A close warm atmosphere is sometimes advised to assist them into growth, and this will start them quickly, but I do not think there is much advantage in it, as a hardy shoot 2 inches long made in a cool place is worth more than one six times that length which has been drawn-out in a close warm atmosphere. When once Camellias are planted-out and established, further than giving water at the root, they may be grown in first-rate order with very little attention.—J. M.

CHANGING SEED—CUTTING POTATOES.

"MISAPPREHENSION exists on the changing of seed," is the opening remark of the article which you have published on page 275, and I think the remark is true. I write now in reference to Potatoes, and as many more acres remain to be planted with this esculent than are already planted, the subject may be opportunely alluded to.

As remarked by the American writer, some varieties of Potatoes seem to thrive especially well in some particular soil and locality. When such is the case there cannot be any advantage in changing the seed, provided the crops are each year well cultivated, and the seed tubers have been well selected, preserved, and prepared. In such a case, and under such conditions, a variety does not degenerate—"wear out." It is new, and fresh, and vigorous every year, and will remain so during the life of the cultivator. That is rather a bold statement, but I have evidence of its truth.

For more than twenty years an early variety of Potato has been grown in a garden with which I am intimately acquainted. The seed has never been changed, and the crops are annually as fine as can be desired. Perhaps they were better last year than during any previous year, owing, it may have been, to some incidence of the season. But on several occasions seed of the same variety has been purchased from various sources, the tubers having arrived in excellent condition and were subjected to precisely

the same treatment as the "old stock;" but not in one instance has the change of seed proved advantageous—on the contrary, the "old sort" is still the best. The additional seed has been obtained sometimes for the purpose of supplementing the home-raised tubers, and also, if found desirable, for sowing seedling them.

Now the variety that succeeds so well in this one particular garden does not always preserve its good character in other places. Where the soil is less suitable it appears to lose vigour and fresh supplies of seed are sought for from the original stock, which proves the truth of another remark in the article alluded to, that "the seed should have been grown in a soil calculated to produce the variety in its best state. That is an important matter not sufficiently attended to in selecting a change of seed."

Another variety which is a favourite for the main crop, and is largely grown on the same estate, will not, with the utmost care in cultivation of the crop and preparation of the seed, retain its good character for more than two years, and it has been placed beyond controversy that it is advantageous to purchase fresh seed of this variety every year. The supply has not always been procured from the same locality; a portion, however, yearly came from the same grower (his surplus stock), and it was found that this seed invariably produced much better crops than did the seed tubers from other districts. So decided was this improvement, that for some years past it has been found profitable to secure the whole of the seed tubers yearly from that district where the particular variety—Dunbar Regent—is grown in its best condition. I am satisfied that it is the right principle to follow in the matter of "change of seed."

It has not unfrequently been recommended that seed tubers possess some special virtues when grown in sandy soil. That has almost become a popular notion, but my experience warrants me in regarding it as a popular delusion. Potatoes grown in sandy soil may be more free from disease than crops from a rich alluvial loam; but the producing power of the tubers which have been grown in the loam is greater than that of tubers grown in sand. Sets from a light sandy soil contain, as a rule, more numerous and smaller eyes than sets grown in loam, and the stronger the soil the fewer and stronger are the eyes: hence the stronger is the haulm resulting and the better is the crop. The soundness of that logic I have repeatedly proved by special and careful experiments, and on it the practice is founded which is adopted in a district where thousands of tons of Potatoes are grown annually for the London, Manchester, and Liverpool markets.

Another matter on which misapprehension exists is that whole tubers are better than cut sets. I have frequently planted medium-sized whole tubers, large whole tubers, and cut tubers in alternate rows, and I have never found the produce of the cut tubers inferior to the others, but often superior. Whole tubers frequently produce a multiplicity of growths, which become overcrowded and weakly, eventually falling and covering the ground, preventing the air circulating amongst the stems. The character of the crop is reflected in the haulm—when the stems of the plant are numerous and small so are the tubers. Good cut sets produce a few and strong growths, so few and so strong that the air can circulate amongst the stems, promoting their sturdiness, and they retain their upright position much longer than the more weakly and crowded growths, and the crop resulting is of greater value. The tubers may be fewer in number but they are finer, and a greater weight is "marketable."

It is to check a multiplicity of shoots that some cultivators find it advantageous to slice off a cluster of eyes from whole sets, a practice which your correspondent "A KITCHEN GARDENER" cannot perceive possesses any merit; but many with whom Potatoes are the staple crop—their principal means of livelihood—fancy there is "something in it," and I fancy so too.—A NORTHERN GARDENER.

GUMMING OF FRUIT TREES.

I HAVE NEVER seen any reason to doubt the dietum of the late Mr. R. Thompson of Chiswick, who states in his "Gardener's Assistant" that gumming is rarely injurious to the Plum or the Cherry; but that as regards the Peach it is the disease "most to be dreaded, and is very difficult to cure; indeed, if it pervades the tree to any considerable extent the sooner the latter is dug-up and replaced by a healthy subject the better." This view I share fully, speaking from my own

experience, but I am prepared to alter my opinion if Mr. W. Taylor (page 264), can furnish one authenticated instance in which gumming was beneficial rather than injurious to a Peach tree, let the disease have been brought about as it might. I have seen gumming under not a few different circumstances, but as far as one was able to judge, it could always be assigned to ill-ripened wood, gross feeding, or external injury, and the results were always disastrous.—J. SIMPSON, *Wortley*.

FUCHSIAS FOR GARDEN DECORATION.

BRELLIANCY of colour is not so fashionable in flower gardens as formerly, and elegance of form receives its well-deserved share of attention. Few plants are more elegant than Fuchsias, which are graceful alike by their habit of growth and charming pendulous flowers. They moreover contain just sufficient of colour to render them cheerful, some of them even showy, yet they have not a semblance of gaudiness on account of their ample foliage.

The small-flowered Fuchsias, such as *gracilis* and *Bicolor-tonii*, are hardy in sheltered districts—that is, their principal stems and branches are not killed by the frost, the plants—or trees—then flower early and are splendid objects for walls and borders. Even in the coldest localities the roots are not killed and the shoots push up freely at this period of the year, and eventually flower profusely. These old Fuchsias are seen to the best advantage when growing on elevated sites, such as mounds in shrubberies, rockeries, and rooteries. For villa gardens they are very appropriate, for they require little or no care, and in almost any sort of soil and any position in town or country they produce their charming flowers in abundance. Such plants afford a valuable supply of flowering sprays for indoor decoration, and for this purpose alone these old favourites are worth growing in every garden where cut flowers are in demand. But the best way of all is to grow the plants as standards, the stems being 3 feet or more in height, and heads about 2 feet in diameter. *F. gracilis* does not make such a good standard as does *Bicolor-tonii* and *globosa*, both of which are naturally pendulous in growth.

These standards are most easily formed. Plant out young plants in good soil and train them to stakes until the desired height is attained, then stop them and form the head. Take them up and pot them each autumn, wintering them in any light or dark place from which frost is excluded, and plant them again in May. Prune them each year closely—more closely than a standard Rose is usually pruned, and they will grow and flower with the greatest freedom. I have had standard Fuchsias in my charge for twenty years which are planted in suitable places in the flower garden every summer, and no plants in the garden give a better return for the trouble bestowed on them.

I have also had for many years standard Fuchsias of another species which is not often cultivated—namely, *F. corymbiflora*. Small "trees" of this old Fuchsia when planted in partially sheltered places where the wind does not shatter the ample foliage or injure the conspicuous corymb of brilliant flowers, have a striking effect, the more so as the plants are dissimilar from all surrounding objects; and certainly no plants are more easily cultivated. The standards of this species are, however, only planted out every alternate year; during other years they are kept in pots and plunged as a check to luxuriant growth.

Standard Fuchsias of the greenhouse varieties are also admirably suited for outdoor decoration. They thrive best in rather moist and shaded places, where for healthy foliage and abundance of flowers they rival, often surpass, others cultivated in pots under glass. The best of all for outdoor decoration is, I think, Rose of Castile. A supply of plants of this valuable old variety should be provided in most gardens where appropriate places for planting and growing them can be found. A group of plants of this Fuchsia afford a pleasing change from the ordinary bedding plants, and yield almost unlimited quantities of flowering sprays for cutting for the furnishing of vases, &c., these sprays being always appreciated. Another excellent variety for garden cultivation is *Venus Victrix*. The glossy foliage, white tube, and purple corolla render this variety highly attractive, and it generally flourishes much better when planted out than when grown in pots. As a white-spalled variety for outdoor decoration *Conspicua* is excellent, as also is the dwarfier variety—*Bland's Florida*. A new variety, *Erecta Von Novelty*, is sure to be a good bedding variety, it being a free grower and bloomer, and showing the flowers well

amongst and above the foliage. Of the dark Fuchsias for growing outdoors I have found *Souvenir de Chiswick*, *Tryme-Oh*, *Roderick Dhu*, and *Noblesse* amongst the best; but almost all the varieties do well in suitable situations.

Fuchsias for planting-out must not be started early in the spring. The breaking of the buds should be retarded as much as possible, so that they make nearly the whole of the growth in the open air. They not only then grow and flower the more freely, but much less attention and glass accommodation is required for preparing the plants.—J. S. P.

VINE MANAGEMENT—RED SPIDER—SHANKING.

The following letter has been sent to me by my successor, who now has charge of the Hon. Mr. Melville's vineries, and its publication may be of service to some readers of the Journal:—

"The early Vines are again carrying an excellent crop. I think they are better than ever, and the late Vines are breaking much stronger than usual. In reference to your remarks on guano and red spider in the Journal of April 5th (page 257), my experience fully confirms all that is there stated. So effectual is guano in repelling red spider that I should not fear taking into the vinery a plant well infested with spider, for I am positive that the insect could not live in the house. I never syringe the Vines, but have always on favourable occasions the atmosphere well charged with the effluvia of guano or farmyard liquid manure, and I am certain that the use of these liquids both inside and outside—that is, manning the border and the atmosphere, has improved and is improving the old Vines very satisfactorily.

"Some of the Grapes shanked last year, but the quantity was trifling, and would not be worth mentioning but for the fact that of the Vine that is planted close to the soft-water cistern not a berry shanked, and the cistern and spout ran over almost continually during the wet weather and saturated that part of the border. So much for too much water being the cause of shanking. My opinion is, that Vines generally suffer much more from want of water than from having too much. The Vines in the fine house built by Mr. — in another part of the village, and which you managed and left in such splendid condition are, although only seven years old, practically ruined; the crop this year is worthless, and I have not a doubt that the cause is overcropping, coupled with insufficient supplies of water to the border and atmosphere of the house. Had he gone on in the old way by supporting his Vines with liquid manure, and using guano to make the red spider sick, guarding also against overcropping, he would now have half a ton of Grapes in the house, whereas he has only a few which are saleable."

The above letter has reference to Vines which for upwards of thirty years have produced heavy crops of Grapes, and it is noteworthy that the "old Vines" are still "improving;" it also has reference to a vinery where the Grapes three years ago were wonderfully fine—the admiration of the neighbourhood, but the Vines have now "gone wrong." The letter is thus instructive in recording success and registering a failure, stating the main contributory causes in both instances. I have never known Vines which have been harder worked without overcropping them than the improving old Vines alluded to, the special object having been the producing of the greatest possible number of bunches ranging from 1 to 2 lbs. each for everyday dessert purposes rather than a smaller number of larger bunches for exhibition. As there are many others who have the same object in Grape-growing—that is, securing useful table Grapes—the greatest possible quantity over a long period of years—I may perhaps usefully describe the system of management that has been adopted with the Vines in question, embodying such remarks on Vine culture generally as the subject suggests. This, however, must be deferred to a future issue of the Journal.—J. WILSON.

MANURE FOR POTATOES.

In answer to "A NEW CORRESPONDENT," the refuse from a malt kiln is said to be one of the best manures for Potatoes. It is called kiln dust, and is not expensive. It should be spread over the ground before the Potatoes are planted and then dug in with the earth, or it may be thrown over the land as a top-dressing soon after the seed Potatoes are put in,

though the former plan is said to be the better one. I have just tried this manure with a patch of Fortyfold Potatoes, and shall be glad to report the result in the autumn. I have also planted some Snowflakes in spent hops under a south wall, and the plants are now coming up very thickly, and look most strong and healthy. I should add that I live on a high hill in a most exposed situation where the soil is light and sandy. I fancy the kiln dust would be still more valuable on a damp clay soil.—E. E., *Wills*.

SPRING FLOWERS IN HYDE PARK.

THAT spring flowers merit attention will readily be admitted; their varied colours and early beauty always meet with admiration. Spring flowers are also so easy of culture that it may be safely asserted there is no garden in the three kingdoms where they may not be grown successfully. In many gardens flowers in spring are just as necessary as a display in summer, and gradually the system of early decoration is extending both in public and private gardens. It is worthy of notice, too, that spring gardening is carried out as successfully in town and suburban gardens in and around London as it is in the rural districts. Such flowers as the Crocus, the Snowdrop, the Primrose, the Violet, the Anemone, and the Wallflower are general favourites; and there are many others equally beautiful that play a prominent part in the spring garden, such as the Forget-me-not, Pansy, Scilla, Arabia, Silene pendula, Alyssum, Aubrietia, Iberis sempervirens, Phlox frondosa, Polyanthus, Vinca major or Periwinkle—the common ornament of the cottager's garden. All these are valuable at this season of the year; all are hardy and of easy cultivation.

In Hyde Park bulbous-rooted flowers play the most prominent part. Early Hyacinths are the chief ornaments just now, their beauty, fragrance, and variety combining to render them specially attractive. The collection includes the most useful kinds for the purpose of outdoor bedding. They are planted in oblong beds, one variety in a bed, the entire length of Park Lane, and the effect produced is charming, almost every hue from the most vivid down to the most soft and delicate in tints of colour being represented. The most effective beds are those of Amy, bright rich red; Robert Steiger, like the former, but deeper in colour; Sultan's Favourite, bluish white, striped with carmine; Sir Edwin Landseer, dark glossy puce; Grandeur à Merveille, bluish pink; Norma, delicate pink; Voltaire, bluish white, wax-like; Grand Vainqueur and La Candeur, two of the purest and best whites; Regulus, porcelain blue, shaded white, excellent; Charles Dickens, pale shaded blue; William I., violet-black. These are twelve of the best Hyacinths for bedding; they all flower at the same period, and they are of the same height, thus ensuring uniform and equal effect. A few beds planted with three colours are very pleasing.

Tulips are also extensively grown in this Park, the collection comprising the best sorts in cultivation, and perhaps no other plants either of early or late-blooming character produce such a glowing combination of colour with the same neat and diminutive style of growth. A few of the most distinct and useful of the single sorts are:—Alida Maria, white tipped and flaked with cerise; Angelina, red and yellow; Artist, crimson; Canary, yellow; Cottage Maid, white and rose; Duc Van Thol, cinnamon red, with orange border; Eleonore, violet purple; Golden Prince, good form and sweet-scented; La Cour de Brabant, yellow, with bronze red bars; Purple Crown, rich crimson; Thomas Moore, orange buff; Vermilion Brilliant, bright scarlet. The best doubles are Agnes, bright scarlet; Duc Van Thol, red, with pale yellow margin; Etoile Cramoisis, violet crimson; Gloria Solis, rich bronze crimson; La Candeur, clear white; Marillo, bluish rose; Regina Raborum, crimson; Rex Raborum, scarlet; Titian, bronze red, with pale yellow margin; Tournesol, scarlet and yellow; Yellow Tournesol, buff yellow, flushed with pale red; and Velvet Gem, crimson, small yellow marginal lines.

Many beds are planted with old bulbs which have done duty before, and no doubt will be seen again. Let no one be satisfied with one or two years' bloom, but try and see how far care and culture will assist in preserving the bulbs for future use again and again. Great injury is done to all sorts of bulbs by the inconsiderate and unskillful practice of cutting, maiming, or tying the leaves; they should be suffered to decay gradually, for the health, strength, and size of the bulb for the succeeding year depends upon its storing up a proper supply of sap, which is in a great degree prevented by cutting off the leaves when in a green state. When the beds are wanted take up the bulbs

and lay them in on a dry warm border, and let them remain till the foliage becomes dry and decayed, then cut it off to within an inch of the bulbs, but touch not the root fibres. Now cover the bulbs over about an inch deep with sand; this prevents them from drying too quickly and shrivelling. After they have remained in the sand three or four weeks rub off the fibres and store the bulbs away until the planting season comes round once more.—N. COLE.

ROYAL HORTICULTURAL SOCIETY.

APRIL 15TH.

IMMEDIATELY the idea was suggested that the growers and salesmen of plants, flowers, bouquets, fruits, vegetables, and salads should unite in presenting an exhibition of their wares, an unanimous response of approval resulted; and it was no sooner suggested that the proposed Exhibition should be held under the auspices of the Royal Horticultural Society, than the Council of the Society not only acquiesced, but promptly determined to give the utmost encouragement to the project.

It may not be scientific horticulture which the Society has been thus ready to patronise; but it was none the less useful, sensible, practical work that was exemplified in the Exhibition of yesterday. The display both by its extent and excellence was worthy of the efforts of those who provided it, and of the patronage of the numerous visitors. It was not novelty merely, but sterling culture, that was the characteristic of the Exhibition—culture devoted to a definite object, and for the most practical of all purposes—namely, the "bringing home" as it were of horticulture to the greatest number who can participate in its benefits. To Mr. Howard, a successful cultivator, the credit is due of having first suggested the practicability of holding this great commercial display, which all connected with have aided so willingly and well to bring to a successful issue.

It was not a show for which special preparations had been made, but was a fair example of produce such as is in a regular way provided for the daily demands of the metropolis, and the more credit on that account is due to the several producers and exhibitors. That it was superior produce none can dispute, and that high culture was shown in the various exhibits is also beyond question. Both in the ornamental and useful departments admirable examples of what are in daily demand in the homes of the affluent were forthcoming—examples which are not always and at all times equalled in a private way, neither, let us add in justice to many cultivators, ought always to be expected.

It were impossible—and the fact may well be remembered—for any one of the exhibitors of yesterday to have excelled in all that was exhibited, class each only submitted his speciality; but gardeners, as a rule, have no specialities, but must distribute their skill and divide—it may be dilute—their resources according to peculiar demands, the exigencies of circumstances, and the dictates of conveniences. It is only fair to mention this—not as affording an excuse for inferior cultivation, but as recording a fact which cannot be gainsaid by competent men.

Let us now glance at the Exhibition—its aspect, arrangement, and collections. The general effect was, of course, less imposing than that produced by a great display of large specimen plants, yet it was extremely telling from the distinct masses of decided colours which the salesmen are so well to dispose effectively. The feathery masses of Spiræas (*Hotéis*) contrasted with the rich blue *Cinerarias*; the massive *Hydrangeas* were not more conspicuous than the golden feathery globe-shaped *Cytisuses*; scarlet *Geraniums* imparted brilliancy, toned by the softer shades of other varieties; Azaleas and early *Primulisms*, some rich, some sober, were rendered the more striking by the association of densely bloomed, healthy, and elegant *Fuchsias*; *Richardias* contributed their distinct white spathe; and *Ferns* and *Lycopods* cheerful refreshing masses of green. Perfume was redolent from the numerous and good examples of *Musk* and *Mignonette*, *Heliotropes* and *Roses* adding also their odour and their beauty; and all these plants were represented in excellent condition, and were remarkable alike for cleanliness, vigour of foliage, profusion of bloom, sturdiness of habit, and the smallness of their pots; they were, in fact, patterns of good cultivation, and exactly suitable for the decorative purposes for which they had been grown. Variety was further imparted by the examples of fruits, vegetables, salads, and bouquets, most of which were good, and none unworthy of the building in which they were displayed.

The Exhibition was held in the arcades east and west of the conservatory, the latter structure being occupied with nurserymen's collections. As affording an idea of the extent of the Exhibition we may state that the corridors are nearly 800 feet in length, and they were quite filled with market produce arranged on staging about 6 feet wide along one side, the remaining space being left for promenade, except where occupied with fruit and vegetables. How many thousands of plants were exhibited it is impossible to conjecture, but many of the collections contained some hundreds, and in one or two instances there could be little

short of a thousand, Mr. Hayes of Edmonton staging, in fact, upwards of sixteen hundred.

The first collection in the eastern corridor was from Mr. Herbst, New Nursery, Richmond. In the centre of this group was a square bed of *Lily of the Valley* in boxes, surrounded with a fringe of *Primula amœna*, and near each end of the collection were squares of pink *Azaleas* surrounded with *Hotéis*. Between these primary beds were small *Palms*, the entire collection being backed with *Palms* and fringed with *Ferns*. The whole of the plants were in admirable condition.

The next collection was Mr. Hayes's great contribution above mentioned. The plants occupied about 150 feet in length of staging, and caused expressions of surprise that all of them had been produced by one cultivator. They were arranged on the mixed system, and consisted of all kinds of hard and softwooded plants in season—*Cytisuses*, *Erica verticosa*, and scarlet *Geraniums* preponderating. The collection also contained many *China Roses* and *Cinerarias*, and a few *Ferns*. It was both an extensive and beautiful display, and only wanted a background of *Palms* and a fringe of *Ferns* to have rendered it perfect.

We next came to a group of ornamental-foliaged plants from Mr. H. B. Smith, Ealing Dean Nursery, Ealing. This was a capital contribution, the plants being remarkably healthy and clean. They comprised *Palms*, *Dracenas*, *Phormiums*, *Pandanus*, *Begonias*, and *Ferns*. In the centre was a plant of *Latisia horticola*, some of the fronds being distinctly variegated, rendering it additionally ornamental.

Messrs. W. & A. Brown, Hendon, staged the next collection, which consisted of *Polygoniums*, very healthy plants of *Poly-stichum acutum*, and bright close masses of *Silene pendula compacta*, *China Roses*, and *Forest-mosses*.

Adjoining this was a good and bright group of considerable extent from Mr. J. Puttick, Park Road, Acton, comprising double and single *Geraniums*, early-flowering *Polygoniums*, very good pots of *Mignonette* and *Intermediate Stocks*; a few "Oak-leaved" scented *Geraniums* were also interspersed amongst the flowering plants.

The next was a "self" collection and a good one—namely, a hundred plants of *Hoteia japonica* from Mr. G. Poulton, Fountain Nursery, Angel Road, Edmonton. The plants, which were in small 45-sized pots, were about 2 feet in diameter and nearly the same in height, and had about a dozen good spikes of flowers on each—just in perfection.

The end group in this corridor was furnished by Messrs. H. R. and G. Wright, Turner Road, Lee, and consisted of large *Palms*, at the front of which were grouped a few good *Orchids*, well-coloured *Crotons* and *Dracenas*, with *Ferns*—a tolerably extensive and very excellent collection.

In the eastern arcades Mr. Reeve, The Nurseries, Acton, contributed a very fine haul, 60 feet in length, arranged principally in squares, each containing from two to four dozen plants of *Mignonette*, very fine; double *Primulas*, good; *Coleuses*, white and scarlet *Tulips*, greenhouse *Polygoniums*, *Hydrangeas*, *Heliotropes*, *Fuchsias*, *Gardenias*, and *Roses*. At the back were *Palms*, *Richardias*, *Arum album maculatum*, and *Hotéis*, and at the front *Ferns*, small *Eunonymuses*, and *Anthericum variegatum*—an admirable collection.

Messrs. Hawkins & Bennett, Lily Gardens, Twickenham, came next with a group about 40 feet long, composed of small admirably bloomed plants of perhaps still the best decorative *Geraniums* in their respective colours—namely, *Vesuvium*, *Madame Vaucher*, and *Christine*. The centre of this lively group was composed of small *Ferns* and *Lycopods*, and cut trusses of *Geraniums*.

The next group, over 60 feet long, was from Mr. Thomas Paget, Clapham. In this bank *Cytisus racematus* preponderated, and dotted amongst them were *Dracenas*, *Pandanus*, *Palms*, and *Hotéis*, the whole being fringed with small *Ferns*—*Adiantum cuneatum* and *Pteris serrulata*.

We next arrived at a very extensive and striking collection of early-flowering *Polygoniums* exhibited by Messrs. Beckwith and Son, The Nurseries, Tottenham. There were nine rows of plants, each row being 60 feet in length. The plants were extremely sturdy in habit, good in foliage, and profusely furnished with bloom. These varieties, which chiefly belong to the French section, are highly useful decorative plants. Amongst the most striking we noted *Duchess of Bedford*, new white, fine. This, with *Digby Grand*, *Kingston Beauty*, and *Mrs. Bradshaw* are the best of the lights. Amongst darks were *Lizzie Holland*, *Rob Roy*, *Whetstone Hero*, and *Triomphe de St. Mandé*. *Faneis Fanny Gair* only. Mr. Beckwith also exhibited some attractive plants of a dark *Heliotrope*—a seedling from *Florence Nightingale*, and one of the best varieties we have seen. Its name is *Lizzie Holland*, and it is good in colour, truss, and habit.

Messrs. Hooper & Co. contributed an effective display of table and general decorative plants in various sizes—from *Palms* 6 feet in height to *Lycopods* only a few inches high. *Caladium argyrites* in this group was very effective, and especially so was *Arundo donax versicolor*. *Ficus Parcelsii*, *Crotons*, *Marantas*, *Dracenas*, *Dieffenbachias*, and *Ferns* completed the collection.

Messrs. Hooper also contributed an extensive display of bouquets and wreaths in Grasses, Everlastings, &c.

Mr. Barr exhibited a splendid collection of Narcissuses in sixty species and varieties, all of which were beautiful and most remaining much more than a mere passing note of appreciation. The brightness of the flowers was relieved by an intermixture of Ferns and curious succulent plants. Mr. Barr also exhibited some admirably-filled Fern cases, window boxes, and vases, for which he was awarded a first prize. Mr. James Bromwich, 25, Buckingham Palace Road, also exhibited Fern cases, &c., tastefully filled with healthy plants, and received the second prize in this section.

BOUQUETS AND TABLE DECORATIONS.—Bouquets were not numerous, but some of them were artistically made, erring, perhaps, if they erred at all, in being fully too large. The best ball bouquet was composed of a central white Camellia surrounded with La France Roses, these being again surrounded with white Azaleas and double Primulas; rising above these, what may be termed base or body flowers, were Moss Rose buds and sprays of Bouvardias, Spiraeas, and single pips of white Hyacinths, the green being composed of *Adiantum cuneatum*. The best bridal bouquet had also a white Camellia in the centre surrounded with white Rose buds, Gardenias, double Primulas, and white Hyacinths, relieved with Lilies, Spiraeas, and Bouvardias. In some bouquets moths had been introduced—no improvement. It is noticeable that the most attractive bouquets were composed of inexpensive flowers, few or no Orchids being employed in their arrangement. The exhibitors were Messrs. Wood, Parmley & Co., 19, Park Gate, Kensington; Mr. J. Bromwich, 25, Buckingham Palace Road; Mr. Stone, Central Avenue, Covent Garden; Mr. Aldous, Gloucester Road, Kensington; and Messrs. F. & A. Dickson, Covent Garden. A very rich bouquet provided by Mr. Wills for H.R.H. the Duchess of Teck was much admired. It was composed of Stephanotis, Roses, and *Odontoglossum Alexandræ* and *Roezlii*.

Messrs. Wood, Parmley & Co. exhibited table decorations, the glasses being elegantly filled with Ferns, and brightened with such flowers as Rhododendrons, *Chrysanthemum carinatum*, *Poa's* Narcissus, and *Dialystras*; with sprays of *Panicum variegatum*, *Cissus discolor*, and *Lycopodiums* as twiners.

FRUIT.—The collection to which the gold medal was awarded was contributed by Messrs. Webber & Co., and included two splendid Smooth Cayenne Pines (English), four smaller fruits of the same Pine from the Azores, very fine Strawberries resembling Duc de Malakoff, good Lady Downe's Grapes and new Black Hamburgs, Brown Turkey Figs, Peaches, Shaddocks, Léon le Clerc de Laval Pears (English) and Easter Bêurre from California, Apples, Oranges, Bananas from Madeira, and Kentish Nuts—a very fine display. The silver medal went to Messrs. J. W. Draper & Son. Easter Bêurre Pears and Winter Calville Apples from France were very fine in this collection, and Tomatoes also from France were excellent; Oranges were also well represented. This is perhaps the worst of all periods of the year for fruit, late fruit being about over, while new fruit is not yet in season.

VEGETABLES.—The gold medal was awarded to very extensive and superior collection exhibited by Messrs. Draper, and in which everything exhibited was in first-rate condition. Asparagus English and foreign, Calflovers, Carrots and Turnips from France, Artichokes, Cardoons, French Beans, Green Peas from Monteno, Cos and Cabbage Lettuce and Endive, were well represented in this capital display.

The silver medal was awarded to Mr. Poupard, who exhibited very fine Seakale, Cabbages, Beet, Radishes, Lettuces, &c. Messrs. Bee & Sams exhibited a box of Telegraph Cucumbers; Mr. Price, Cookham, Strawberries; and Mr. Domaille, Guernsey, very fine Ashleaf Potatoes. Exhibitors of vegetables and salads were not so numerous as might have been expected.

Mr. McLaren exhibited his new saddle boiler, and Messrs. Wile, Burrell, Huggins, & Co. excelsior mowing machines.

Gold medals were awarded to the following "Cottage Garden" exhibitors:—Messrs. Herbat, Richmond; Hayes, Edmonton; Wright, Les; Reeves, Acton; and Hawkins & Bennett, Twickenham. Silver medals to Messrs. Smith, Ealing; Brown, Hendon; Pntick, Acton; Poulton, Edmonton; Hooper & Co.; Barr and Sugden, and Bromwich; and bronze medals to Messrs. Wood and Parmley, Dickson, and Aldous—the four last-named for bouquets and cut flowers.

The nurserymen also again sent admirable contributions to the Show, and aided in rendering it successful. We cannot do more than record the fact that Mr. B. S. Williams staged ornamental-foliaged plants and Orchids; Mr. Wills, Palmæ, Azaleas, &c., fringed with *Isolepis*; Messrs. Osborn & Sons, Fulham, Palmæ and Ferns; Messrs. Lane & Son, Berkhamstead, Roses, Azaleas, and Rhododendrons; Mr. Aldous, general decorative plants; Messrs. Rolleston & Sons, standard Azaleas; Mr. Dean, Primæ, Adonis, Wallflowers, &c.; Mr. Turner, Slough, the godly number of Alpine Ariculas; and last—and many of the plants also the least—Messrs. Croucher & Botter a collection of curious Succulents. Silver medals were awarded to Messrs.

Williams, Wills, Lane, Rolleston, and Osborn & Sons; bronze medals, to Messrs. Dean, and Croucher & Botter; and a vote of thanks to Mr. Aldous.

Such was the Show, the first of its kind that has been held in the Society's gardens—a Show which was both attractive and instructive. One such exhibition in each year would afford a refreshing change from the higher type of exhibitions, and would enable the good and useful work of many able cultivators and decorators to be appreciated and in a measure rewarded. For these and other reasons—not the least being the opportunity afforded for horticulturists of all grades uniting under pleasant auspices and for a common object—we trust that the first display of Covent Garden wares will not by any means be the last.

The Duke and Duchess Teck, the Duke and Duchess of Bedford, and other distinguished exhibitors visited the Exhibition during the day. The Duke of Bedford also presided last evening at a dinner at the Criterion, which was attended by the exhibitors and others who were identified with the Show.

FRUIT COMMITTEE.—H. Webb, Esq., V.P., in the chair. We can only say that a cultural commendation was awarded to Mr. Ripley, gardener to R. Hudson, Esq., Clapham Common, for a good brace of Telegraph Cucumbers; and that thanks were voted to Mr. Tillery, Welbeck, for some examples of late Grapes, and to Mr. Froud, gardener to J. Bulgey, Esq., Hanley Place, Dartford, for a dish of Early Rose Potatoes.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. First-class certificates were awarded to H. J. Elwes, Esq., for Tulipa Greigi—a fine scarlet species from Central Asia; to Mr. G. Smith for Polyanthus Duke of Wellington, rich gold and maroon, the lacing being clearly defined; to Messrs. G. Bath & Son for early Polyanthus, Duchess of Edinburgh, white with rosy lilac blotch on the upper petals. It is a very free-flowering variety, and valuable for forcing. And to Mr. R. Dean for three varieties of Primula corticosides named *Cerulea alba*, *Lilacina*, and *Maxima*, all of them being very fine.

ROYAL BOTANIC SOCIETY'S SECOND SPRING SHOW.

APRIL 18TH.

NOTWITHSTANDING an exhibition of a novel character occurring at South Kensington, the bleak and wintery weather of the past few days, and only a spring Show, there was a very highly attractive display. The lovely banks of Roses and Azaleas staged by the various competitors riveted the attention of every visitor. Roses are always appreciated, and find more admirers than almost any other flower, more especially when the Roses are not attainable out of doors; they possess a warmth, a beauty, a charm of their own. The splendid collection set up by Messrs. Veitch & Sons of Chelsea, to which an extra prize was awarded, deserves more than a passing word of praise—the plants were admirable examples of culture, and consisted of well-known sorts suitable for pot culture and forcing. Conspicuous amongst them were Madame de St. Joseph, Madame Villermoz, Paul Verdier, Duke of Edinburgh, Marquise de Castellane, and Madame Clemonce Joigneaux.

In the class for nine Roses in pots (nurserymen) the competition lay between Messrs. Paul & Son of Cheshunt and Mr. Charles Turner of Slough, and the prizes were awarded in the order named; Messrs. Paul & Son's being a very even and admirably finished collection consisting of La France, Dupuy Janin, Madame Victor Verdier, Madame Lecharme, Marquise de Castellane, Madame Thérèse Levet, Beauty of Waltham, and Cheshunt Hybrid. Mr. Turner was a very close second with plants somewhat larger, including good examples of Souvenir d'un Ami and Celine Forestier.

In the class for six new Roses (nurserymen) sent out in 1875 and 1876 Mr. Turner was the only exhibitor, and staged *Marchal Robert* (Tea), *Duchesse de Vallombrosa*, Rev. J. B. Camm, Royal Standard, Oxonian, and John S. Mill; they showed great promise, and were deservedly awarded a first prize.

The competition in the class for twelve stove and greenhouse plants was very meagre. Mr. Wheeler was the only exhibitor, to whom the Judges awarded a first prize. Mr. Wheeler had the first prize also for six Heaths; and a second was awarded to the same exhibitor for six early-flowering stove plants, which call for no particular comment.

For six greenhouse Azaleas (nurserymen) Mr. Turner was deservedly awarded first honours for splendidly bloomed plants of *Apollo*, *Duc de Nassau*, *Roi Leopold*, *Reine des Pays Bas*, *Ferdinand Gelejan*, and *Cheloni*. Messrs. Ivory & Sons, The Nurseries, Dorking, were second. In the corresponding class for amateur Mr. Ratty, gardener to R. Thornton, Esq., The Hoe, Sydenham Hill, was placed first; Mr. James, gardener to W. E. Watson, Esq., Redhill, isleworth, second; and Mr. Wheeler third. The competition in six *Amaryllis* lay between Mr. W. Knowles, gardener to H. Little, Esq., Hillingdon Place, Uxbridge, and Mr. Roberts, gardener to W. Terry, Esq., Peterborough House, Fulham. The prizes were awarded in the

order named. A first prize was awarded to Mr. Torner for twelve *Arniculas*, he being the only competitor; still the collection was highly superior.

For twelve hardy herbaceous plants Mr. Roberts exhibited *Iberis sempervirens*, *Primula cortusoides*, *Trillium grandiflorum*, *Doronicum austriacum*, a *Scilla*, *Arabis*, *Triteleia*, Solomon's Seal, and a Lily of the Valley, to which the Judges awarded a first prize. To the same exhibitor was also placed a first for six old-fashioned plants, which contained the same sorts with the exception of *Saxifraga crassifolia*. A second prize was also awarded to Mr. Roberts for twelve bulbous plants, in which collection there was a curious *Hemanthus* named Terryi, to which a botanical certificate was awarded.

In the class for nine *Cinerarias* (open) Mr. James was first, showing in his well-known style; and Mr. Ford, gardener to J. G. Megaw, Esq., second with very fair examples.

Extra prizes were awarded to Mr. B. S. Williams, Victoria Nurseries, Holloway, for a miscellaneous collection of plants; to Mr. John Walker, Thame, for cut blooms of Roses in very good condition; to Mr. G. Wheeler for a miscellaneous collection of plants; to Mr. Ford for two large plants of *Clerodendron Balfourii*; and to Mr. H. Heime, gardener to F. A. Philbrick, Esq., for a grand collection of Orchids, among which were good examples of *Lycaete Skinneri*, *Cattleya Skinneri*, *Dendrobium densiflorum albo-sanguineum*, and *Odontoglossum cirrhosum*, *Pescatorei*, and *Alexandre*.

Certificates of merit were awarded to Messrs. James Veitch and Sons for *Croton McArthurii* and *Acalypha musaica*; to Messrs. G. Paul & Son for a new Hybrid Perpetual Rose, *Margaret Brassica*, a splendid large and perfect flower somewhat in the way of *Madame Victor Verdier* and *Charles Lefebvre*; and to Mr. James for *Cinerarias* Lord George Hamilton and Sarah Winter. Botanical certificates were awarded to Mr. Williams for *Adiantum neo-guiniense*, and to Messrs. Veitch & Sons for *Coleus multicolor*.

NOTES AND GLEANINGS.

THE NATIONAL ACRICULA SHOW which is to be held at the Crystal Palace on the 24th inst. is expected to be well supported by all the leading growers of this beautiful alpine flower. The southern exhibitors who are announced to contribute are Messrs. Turner, Douglas, James, Dean, and Jones; and from the north Messrs. Horner, Cooper, Gorton, Woolhead, Wilson, Booth, Barlow, Simonite, Harrison, Royd, Handle, and others are expected. It is anticipated that a thousand specimens will be staged; also *Polyanthuses*, *Primroses*, *Roses*, and *Azaleas*, so that the Exhibition may be regarded as worthy of extensive patronage.

— Some of the most striking beds of spring flowers in Mr. Barr's gardens at Tooting are those planted with *TRITELEIA UNIFLORA*. This bulbous plant is perfectly hardy, and for several weeks during the spring produces a mass of flowers which cannot fail being admired. Where the bulbs are planted closely together after the manner of *Crocuses* a perfectly level and dense mass of flowers is produced, which resists the effects of inclement weather. When thus grown, and when the beds are seen from a distance, their appearance is white—almost like a covering of snow. A distinct variety of this plant is *T. uniflora lilacina*, which is highly attractive when cultivated in pots.

— At the last meeting of the Royal Botanic Society Professor Bentley called the attention of the Fellows of the Society to a plant of *EUCALYPTUS GLOBULUS*, now in flower in the gardens for the first time, and said that the value of this tree from a sanitary point of view was daily becoming more known and appreciated.

— "A LADY GARDENER" writes—"May I recommend the common PINK *LYCENIS* (*L. Viscaria*) that grows by the roadside as a very effective spring bedder? I brought in a number of small roots last spring, which are now bushy plants, and bid fair to make a brilliant display. I have only once seen a bed of these—at Clifton Hall, Notts."

— We have received from Mr. Beaulah, a successful amateur orchardist, some specimens of *HAMBLEDON DEX ANS* APPLE in excellent condition—firm, well-coloured, and full-flavoured. Mr. Beaulah finds this to be one of the most valuable of late Apples, and very profitable as an orchard standard. It is the favourite Apple at the present time with the Sheffield fruiterers, who purchase it readily at 5s. per 14 lbs. It is an excellent cooking Apple, and is quite admissible on the dessert table, its distinct flavour being agreeable to many palates. The fruit is above medium size, and the tree is a good bearer.

Although this variety originated in Hampshire it is very hardy and flourishes well in more northerly districts. The specimens submitted to us were grown in Lincolnshire in shallow medium loam with a substratum of limestone.

— THE *American Cultivator* alluding to the TRAFFIC IN FERNS states "the cultivation and sale of creeping Ferns is among the new industries of New England. This business originated about four years ago at Greenfield, and is now carried on there extensively. The sales were limited at first, but as the demand steadily increased the woods east and south-east of Springfield, in Longmeadow, Wilbraham, and adjoining towns, have been added to the scene of operations. The season for gathering Ferns extends from the middle of August till the season of early frost; at first only fresh Ferns were sold for use in decoration and for supplying ferneries and Wardian cases, but now the trade in dried and pressed Ferns forms the larger part of the business, and gives employment to many hands. This is a branch of employment for women that might have an extensive following, since the supply of raw material in New England is sufficient to supply the world's demand for Ferns." American dried Ferns have been occasionally exhibited at South Kensington, and have been much and deservedly admired by visitors.

— TULIPA GREIGII is now flowering at Glasnevin, and is thus described in the *Irish Farmers' Gazette*:—"The plant is growing in a very small pot, yet the flower when expanded under sunshine measured nearly 6 inches in diameter. This broad floral goblet, for such is its shape, is of glowing orange red, somewhat of the colour of *Papaver orientale*, but yellow at the base, and this yellow portion blotched on the interior surface of each division of the perianth with very large and very striking oblong dark spots, which add much to the effect. A singular and noteworthy feature is a curious little horn-like process which proceeds from and terminates each division of the perianth; and being different in colour is the more remarkable. The leaves are broad, and similar in shape and appearance to those of the ordinary show or bedding Tulips. It is very effective as a pot plant, and one can easily imagine, when more plentiful, what the effect of a bed of it will be, with its broad fiery cups expanding under the influence of, and drinking deep draughts of sunshine. This very remarkable Tulip comes to us from Turkestan in Central Asia, where it was first met with by Russian collectors. The specific name has been given it in honour of General Greig, President of the Russian Imperial Horticultural Society." This brilliant Tulip is also flowering in Mr. Barr's collection at Tooting.

— DR. J. C. BROWN, who held among other appointments the Professorship of Botany in the College at Cape Town, has published a pamphlet on "THE SCHOOLS OF FORESTRY IN EUROPE," urging the desirability of a similar school being connected with the Edinburgh Arboretum. Such schools ought to be in this country; for, as Dr. Brown quotes from a speech of Sir Robert Christison, "The science of forestry is not taught in this country, and the consequence is that many young gentlemen have to proceed to the Continent in order to acquire that branch of education." "In Spain, in Italy, in Austria, in Poland, in Rasia, in Finland, in Sweden, in France, and in every kingdom and principality in Germany, there have been established by government schools of forest science, or classes in connection with existing universities or polytechnic institutions, in which instruction is given in that science; but nowhere in Britain, in the United States of America, or in any of the British colonies, so far as is known to me, are similar facilities afforded for the study of this."

— THE *American Cultivator* in referring to *CYPRESS TREES* states that the oldest tree on record is the *Cypress* of Somma in Lombardy, figured by London in his "Arboretum." An ancient chronicle at Milan proves it was a tree in Julius Cæsar's time, n.c. 42. It is 121 feet high, and 23 feet in circumference at 1 foot from the ground. Napoleon when laying down the plan for his great road over the Simplon diverged from a straight line to avoid injuring this tree. The *American Cypress* of the Southern States grows naturally in low ground, and frequently attains a height of from 100 to 120 feet, with a circumference at the base of from 25 to 40 feet. These trees, with their pendant streamers of long moss floating on the wind, are a peculiar feature in Southern scenery. They seem especially appropriate for cemeteries, and their use for that purpose in some of the cities of the Southern States—Charleston, Savannah, and others—is well known. The *Cypress*

attains its amplest development in Mexico. The Cypress of Montezuma in the garden of Cheputepoc was a famous tree four hundred years ago, and is 45 feet in circumference. Humboldt describes a tree in the village of Atlisco that was 76 feet in girth; also one still more gigantic in the churchyard of Santa Maria del Tule, 118 feet in circumference. Recent travellers speak of other trees near the ruins of Palanque equal in size to the latter giant. The estimated age of these trees is from four thousand to five thousand years.

MINIATURE ROSE GARDEN

AT COOMBE BANK, THE RESIDENCE OF THE MISSES CHRISTY.

This garden, which was formed and planted by Mr. Moor- man, is 44 feet in diameter; the middle, or No. 1, round bed

being filled with Countess of Oxford and No. 4 with Victor Verdier, No. 5 with La France, and No. 6 with Mlle. Engonie Verdier. These beds are 5 feet in diameter, and the gravel paths around them are 3 feet wide, each bed being formed with Box for an edging.

The outside ring or border is 6 feet wide, and planted with Roses of all shades and colours, care being taken to plant those sorts that are prized most for the quality of the blooms. The outer ring is planted round with Yews, which form a close compact dwarf hedge and enclose the garden, the only entrance being under an archway; so that from the lawn the roseray can be scarcely seen until entering it—a "pleasant surprise."

The soil was originally a poor gravel, which was carted away and replaced by some more fertile. The ground rather rises

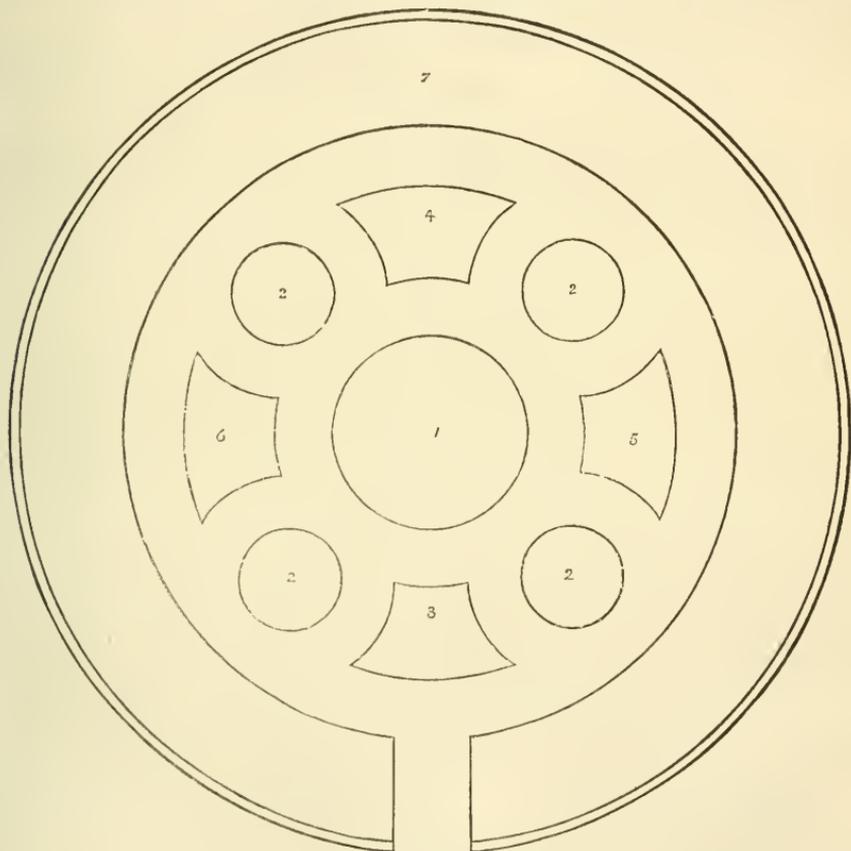


Fig. 37.—ROSE GARDEN AT COOMBE BANK.

is 10 feet in diameter, and is planted with standards of rich-coloured Hybrid Perpetuals, such as Duke of Edinburgh, Louis Van Houtte, Camille Bernardin, Alfred Colomb, Charles Lefebvre, Dr. Andry, Duc de Rohan, Navier Olibo, &c. The four (No. 2) beds are each planted with four plants of Gloire de Dijon worked on the dwarf Briar stock, and are kept trained into cones or pyramids; by this mode of training pruning is almost dispensed with, and the twisting around of the gross shoots made each season causes them to break well back, and both in the early season and during the autumn are loaded with hundreds of good blooms.

All the other plants in the roseray are dwarfs on the Manetti. Nos. 3 and 4 beds are planted to correspond in colour, No. 3

at the back, so that the large circle forms a bank all round and the small beds are in a pan below.—W.

[We can testify that this is a pratty roseray, easily formed, and well adapted for small gardens. The surrounding border is a raised bank, and the boundary hedge, being Yew, affords shelter from winds.—Eds.]

SQUIRRELS, HEDGEHOGS, AND BULLFINCHES.

"WILTSHIRE RECTOR" affirms that squirrels live on Beech mast; quite true, still the squirrel will seek a change of diet even though millions of Beech nuts are at his command. I have seen this and know it to be true. For instance, on a

nobleman's estate in Hampshire noted for its Beech trees squirrels abound, and I have seen them come and run along the top of the garden wall, go down the fruit trees and make sad havoc among the fruit. It is only by the unremitting vigilance of the gardener with his gun that any fruit can be kept for use in the house. The hedgehog doubtless is of service in the garden, for the experience of most gardeners has given a verdict in its favour. The question is, Are hedgehogs entirely harmless? I assert, No. They will suck the cow, and spoil her too. This is a fact indisputable. I have sought and gained information from farmers of long standing. I notice next the Bullfinch. It seems to have got into the Rector's bad books altogether, for he has scarcely a good word for it. I find upon the best of authority the bullfinch rarely frequents the garden, and then only when there is great scarcity of food outside the garden. We have three other birds which are far greater enemies in the garden. They are the sparrow, the tomtit, and the greenfinch. It is these birds which destroy the buds of the Gooseberry, the Red Currant, and the Plum.—A MASTER GARDENER.

AMSTERDAM INTERNATIONAL EXHIBITION.

APRIL 13TH TO MAY 2ND.

WITH the spread of commerce and the increase of wealth there has been fostered improved tastes; hence the luxuries of life have been proportionately indulged-in in all countries. Some of these luxuries may be local, amounting only to fashions; others are beyond fashion and above mere custom, and have become established as an integral part of the social economy. Such is horticulture. From a luxury it has expanded to a necessity. The wholesomeness of the pleasures resulting from horticultural pursuits, the enjoyable fruits which follow, and the substantial advantages which are the natural outcome of the allied industries have rendered it incumbent on those countries which have participated in the benefits to make special efforts leading to further advancement, to stimulate to skill and reward merit wherever they can be found and in whatever manner exemplified. For the bringing together—the centralising, as it were—of that skill, merit, and enterprise so eminently identified with horticultural pursuits public exhibitions have become a necessity of the times. From local they became general, from general national, and from national international.

For such an exhibition Holland must be acknowledged to be peculiarly appropriate, for the wealth of no nation is perhaps more intimately connected with horticultural industry than that which has Amsterdam for its capital. The position in this respect which Holland enjoys is not due to the salubrity of its air, the attractiveness of its situation, or the extent and beauty of its natural flora. It is not favoured with any of these natural advantages, but it possesses, and has long possessed, a race of sturdy sons proverbial for their industry, and by well-directed skill they have won success so marked as to command universal admiration. For what is Holland? A nation thickly populated, thrifty, even wealthy, so much so as to be envied by the larger kingdoms of more favoured climes. What was Holland? Her very name tells us: it is literally "Hollow-land" (from the German word *hohle*, low), land much of which is below the sea level; once a swamp, but now fertile pastures and rich arable land—land which in itself is the best monument of the nation's industry, for since the peace of 1815 the gain each year recovered from the sea has averaged 2500 acres. Such labour has been thus immortalised by Goldsmith—

"Methinks her patient sons before me stand
Where the proud ocean leans against the land,
Springs its long arms amidst the wat'ry roar,
Scoops out an empire, and usurps the shore."

That is truly descriptive of Holland; but what shall we say of its metropolis Amsterdam? It has been designated the "city of piles" and the "floating city," with its "canal streets," of which Gay once wrote—

"O happy streets! to rumbling wheels unknown,
No carts, no coaches, shake the floating town."

But matter-of-fact events have travelled more swiftly than the poet's imagination, for "rumbling wheels" there are now plenty, yet the city remains one of canals, and it is now also—what more immediately concerns us—emphatically a city of flowers.

"But is it not too early for flowers?" Does some one ask? It is not too early for those flowers which form the staple floral commodity of the Low Countries—bulbs. Our Dutch friends were not likely to fix the time for a great gathering of this nature when their "own flowers" were sleeping. Neither is the date too early for Camellias and Azaleas, although these are neither so numerous nor so fine as we have seen at previous Con-

tinental exhibitions. It is not too early for Palms, for they are at all times beautiful objects. Ferns are similarly always ready, and are always found in superior health and elegant statelyness "over the water." Neither is it too early for many choice exotics—ornamental-foliated and flowering plants—which we expected to have seen exhibited in larger numbers by our Continental friends, and who were quite overpowered by the splendid contributions of our principal English representatives—the redoubtable B. de Williams. You see the season of the year is too early and the period of the exhibition too long to encourage English exhibitors generally from endangering their valuable new plants to a lengthened sojourn from their congenial home. Other English firms, therefore, who could have contributed so well at Amsterdam have preferred reserving their plants for pending English exhibitions. Yet if Mr. Williams is alone as it were at Amsterdam, his plants are sufficient both in numbers and for quality to sustain the reputation of his country, and their owner has the reward of his courage and enterprise in the honours which his collections have commanded.

The Exhibition is held in the grounds adjoining the Palace of Industry, an imposing structure erected for the first great Exhibition of Industry which was held at Amsterdam, and in which the great International Exhibition of Horticulture was held in 1865. One would have thought that the success that attended the arrangement and general effect of that exhibition would have induced the promoters of the present one to have held it here also; but instead of this being the case everything horticultural is scattered over the grounds outside the main building, the detached houses and sheds, while the great building is occupied with exhibitions of a very miscellaneous description. Perhaps it is wrong to say that there is nothing horticultural in the great building, for its area is divided into three compartments, the centre one being a circle with a jet of water in the middle, which rises about 25 feet, and in its fall makes a splash over some artificial rockwork. Surrounding this jet are placed Tree Ferns in tubs at a respectful distance from each other, and between them some specimens of carpet bedding, composed of succulents and other plants adapted for that style of ornamentation. On either side of this circle is an oval filled with large specimens of Ferns and Palms. The rest of the building is taken up with stalls on which are exhibited for sale apparatus of various kinds, such as syringes, pruning knives and secateurs, lawn mowers, vegetable slicers, sausage machines, charcoal filters, the ubiquitous "Crystal Palace" diamond cement, the magic knife-sharpeners, Crystal Palace wares, and in short that miscellaneous sort of commodities which one sees at the Crystal Palace and in out-of-the-way corners of the Agricultural Hall at the Christmas cattle show. Why this valuable space, so well adapted for making a grand display and many fine effects, should have been frittered away for such a purpose as we have indicated is beyond comprehension. It was not because there was any lack of the material with which to make a fine show that this could have been done, for distributed throughout the grounds were some as fine specimens of horticultural produce as could be seen anywhere. There is no scarcity of Tree Ferns, Palms, Cordylines, and other house plants, and there are such collections of hardy trees and shrubs as are rarely seen on such occasions. Splendid green and variegated Hollies 12 and 14 feet high, neatly trimmed and trained; handsome standard Bay Laurels and Laurustinas, a profusion of large and well-grown specimens in tubs of Conifers from the noted nurseries of Boskoop, with all of which the building could have been amply furnished in every corner. And then there are exposed in open sheds in the grounds such well-grown specimens of New Holland Acacias, forced Rhododendrons, standard Roses, Azaleas, and miscellaneous greenhouse plants as would have added beauty of colour and effect to the more sombre masses, but they were left exposed to withering winds and sunshine, which in the first days of the Exhibition were already producing a telling effect upon them. Everything of interest from a horticultural point of view, and which would have been useful in producing artistic groups in the large building, is, as we have already said, dispersed in numerous glass houses of the ordinary description and in open sheds throughout the grounds surrounding the building, and as a consequence there is no concentration of interest in what might otherwise have been a very fine exhibition. The effect produced by this kind of arrangement is suggestive of a large nursery establishment, and but for the large number of people, the quantity of hunting decoration, and the general gawk accessories, there is nothing to distinguish the place from such nurseries as those of M. Van Houtte at Ghent, Messrs. Veitch & Son of Chelsea, or Mr. B. S. Williams of Holloway, and perhaps it is no compliment to these gentlemen to make the comparison.

In one of the houses we found Mr. B. S. Williams occupying the most prominent position, having filled one long table with miscellaneous stove and greenhouse plants, and the half of another with excellent specimens of Crotons and Pitcher-plants, the whole number exhibited being about 350, including a remarkably fine collection of Orchids, which were placed in a sort of

annexe to the great building. An idea may be formed of the magnitude and importance of the Holloway display when we note the classes and their contents, for which gold medals were awarded. The six new plants not in commerce comprise *Sarracenia Williamsi*, *Panax laciniatus*, *Adiantum palmatum*, *Dendrobium Youngi*, *Croton matabelei*, and C. Prince of Wales. Two new plants introduced since 1876 consisted of *Croton Dierseii*, *Maranta Massangeana*, *Cyssa intermedia*, *Phacopteris Diane*, *Eranthemum Eldorado*, *Zamia crassifolia*, *Lomaria gigantea*, *Croton Andreanum*, *Brabea filamentosa*, *Cibotium nigrescens*, *Dieffenbachia marmorata*, and *Acalypha macrophylla*. One new plant in flower Mr. Williams exhibited—*Pultenea rosea*, a hard-wooded plant of great promise, which has been previously described. In the class for twelve Orchids in flower we noted *Cypripedium villosum*, *C. niveum*, *Dendrobium nobile*, *D. Wardianum*, *Cattleya citrina*, *Lycaote Skinneri*, *Odontoglossum Pescatorei*, *Oncidium sarcodeus*, *Masdevallia ignea*, *Vanda snavis*, *V. insignis*, *Phalopsis Schilleriana*, and *Odontoglossum Roezlii*; the class for six Orchids being represented by *Cypripedium villosum*, *Oncidium Marshalli*, *Dendrobium nobile*, *Masdevallia Lindleyi*, *Vanda tricolor*, *Odontoglossum Alexandrie*, and *O. triumphans*. The Orchids are in splendid condition and include many examples of superior cultivation, and we must in justice add a meed of praise to the skilful and successful way in which these fragile-flowering plants had been packed.

The prize class for six Nephentes comprise *N. Hookeri*, *Rafilosa sanguinea*, *intermedia*, *rubra*, *hybrida*, and *Sedenii*—medium-sized plants in admirable condition.

The twelve Crotons staged by Mr. Williams are *C. Weissmanni*, *picatum*, *Youngi*, *Hookeri*, *majesticum*, *spirale*, *volutum*, *longifolium*, *Veitchii*, *undulatum*, *Cooperi*, and *variegatum*. These are half specimens in robust health, but the period of the year is fully too early for showing them in their best colour. Mr. Williams is also successful in the class for fifty *Cyclamens*.

The extent and quality of Mr. Williams's miscellaneous collection also merits notice. It contains the following plants:—*Agave Taylori*, *Adiantum Farleyense*, *Anthericum variegatum*, *Anthurium Scherzerianum*, *Agrostis sinuata*, *Araucaria Goldiana*, *Ardisia Veitchii*, *A. elegantissima*, *Artocarpus Crennini*, *Asplenium formosum*, *Amargyllia Ackermannii pulcherrima*, *Anectochilus petala*, *intermedia*, and *Dawsoni*, *Erahea filamentosa*, *Begonia metallica*, *Berthoulea marmorata*, and *B. Mirandi*, *Brainea insignis*, *Bromelia Binnettii*, *Coccoloba Weddelliana*, *Cordylina indivisa*, *Cnopia filicifolia*, *Calanthe Lewisiana*, *Ceryllodea recurvata striata*, *Cyssa intermedia* and *C. Normanbyana*, *Cyathus Burkei*, *Dracaena Barrovi*, *Imperator*, *Youngi*, *ferrea grande*, *ambalibi*, *Hibberdi*, *imperialis*, *Baptistii*, *Realii*, *exelsa*, *Hendersoni*, and *Nitschereri*, *Dacrydium elegans*, *Dieffenbachia imperialis* and *Bausei*, *Dicksonia Youngi*, *Dendrobium Youngi*, *Ficus Parcellii*, *Geonoma gracilis*, *Gleichenia dioica* and *rupesstris glaucescens*, *Ixora Prince of Orange*, *Imantophyllum minutum*, *Jacaranda mimosaefolia*, *Hymenophyllum demissum*, *Hydrocolea Bergiana*, *Kentias Mooreana*, *Fosteriana*, and *australis*, *Maranta Massangeana*, *Marattia Cooperi*, *Melastoma corallipes*, *Nipholobus corymbiferus*, *Oreopanax dactylifera*, *Phorinia errulata variegata*, *Phormium atropurpureum*, *Pultenea rosea*, *Panax exelsa*, *Paulinia thalictroides*, *Prenanthes elegantissima*, *Pandanus Veitchii*, *Pteris Veitchii*, *Plectocoma sasamica*, *Rhopala Jonghi*, *Sarracenia purpurea*, *variolaris*, *flava maxima*, *flava picta*, and *Drummondii alba*, *Tillandsia argentea*, *Toxicophloeum spectabile*, *Thrinax elegans* and *T. argentea*, *Theophrasta imperialis*, *Trichomanes radicans* and *T. humilis*, *Todea superba*, *Fraseri*, and *pellucida*, *Veitchia canterburyana*, *Woodwardia radicans cristata*, *Yucca filamentosa variegata*, *Zamia crassifolia*, *Ada aurantiaca*, *Cattleya Loddigesi* and *citrina*, *Cypripedium Argus*, *barbatum*, *giganteum*, *Crossii*, *Dayanum*, *Harrisonianum*, *Hookeri*, and *biflorum*; *Dendrobium Devonianum*, *Wardianum*, *crassinode*, *Barberianum*, *crystalinum*, and *chrysoctonum snavissimum*; *Lycaote Skinneri*; *Oncidium phymatocladum*, *araneum*, and *Grevillei*; *Odontoglossum Pescatorei*, *triumphantum*, and *Cervantesii*; *Phalopsis Roezlii album*, *Alexandra*, *luteo-purpureum*, and *hystrix*; *Vanda tricolor formosa* and *V. superba*.

It is gratifying to us to be able to report for the credit of British horticulture that Mr. Williams has gained the first prize in every class in which he has shown, all of which are gold medals, and that he has also secured the great gold medal offered by the King to the "foreign nurseryman who shall contribute most to the importance of the Exhibition." Both the King, the Queen, and Prince Henry lingered long over Mr. Williams's plants, and their Majesties showed by their remarks and their appreciation of this section of the Exhibition their knowledge of plants and how well they could estimate a plant when well grown. Her Majesty was graciously pleased to accept and take away with her carriage two plants of *Cyclamens* and an *Ardisia*, of which Mr. Williams had begged Her Majesty's acceptance.

In the house containing Mr. Williams's plants part of a table

is occupied with a miscellaneous collection of plants from M. Linden of Ghent. M. Linden does not appear to have contributed so largely to this Exhibition as has been his wont on similar past occasions when there have been international gatherings in other countries. There are no *Orchids*, for which M. Linden is so famous, and indeed his collection is more than usually small. The most noteworthy plants in this collection are *Tillandsia tessellata* from New Grenada, the leaves of which are beautifully tessellated with white and green; *Anthurium crystallinum*, *Caraguata* sp. nova, a Bromeliaceous plant with leaves of a cream-coloured ground transversely marked with lines of a chocolate colour; a new *Ardisia* from New Caledonia with horizontal bipinnate leaves 15 to 18 inches long, the leaves and branches covered with dark spots—a promising plant; also *A. filicifolia*, a new *Anthurium* Dechardii, *Margratta attenuata*, *Kentias Lindleyi* and *rupicola*, the new *Pandanus Pancheri* from Caledonia, and *Philodendron gloriosum*.

We shall not occupy space with noticing specially any of the exhibits further than those that are of a more general interest, and of which our readers will naturally expect some information. It would be a mere waste of space to notice the collection of exhibitors whose names are totally unknown in this country, and which are in themselves of the ordinary description of things that are seen at all flower shows. We shall, however, proceed to give a few remarks on the exhibition of bulbs, which, being a national speciality, will no doubt be interesting.

Hyacinths one would expect to find not only numerous in quantity and variety, but also excellent in quality in this the Hyacinth-producing country; but there is nothing but disappointment in the latter, the growth and bloom do not approach those we see exhibited at our own shows in London by Meers, Cutbush, Paul, Veitch, and others. This possibly may be accounted for by the fact that the best—that is, those bulbs which are fully matured, are exported, and consequently what are here shown are the younger bulbs; but on such an important meeting at this one would have imagined that most of the best growers would have secured such roots as would have produced the many varieties in perfection which they have brought together. New varieties are singularly deficient in quality and quantity.

In the classes for new varieties not yet in commerce we find only three shown—*Cherub*, single, bright orange crimson, similar but with much more colour than the well-known *Solfaterre*, bells good and segments rounded at the points; the spike is, however, not large. *MelMahon*, single, dark violet blue. In some of the bells there is a white segment producing a curious effect on the spike, which although long is not quite broad enough to suit our exhibitors' tastes. *Miss Braddon*, double, pure white, spike very thin, and bells not large. Of course there are large numbers of sorts which run chiefly on those known to most of our readers, and there are others that seem hardly worth growing now there are such good varieties as *Grand Lilies*, *Baron Van Tuyl*, and *Charles Dickens* amongst blues; *Moonlight*, *Solfaterre*, and *Von Schiller* in reds; *Queen of the Netherlands*, *Mont Blanc*, *Alba Maxima*, and *Snowball* in pure whites; *Grandeur à Merveille*, *Gigantea*, and *La Franchise* in blue; *General Haveloock*, &c. We have, however, found the following shown amongst new and good sorts:—*Robert le Diable*, single, indigo blue, curiously shaded reddish plum; *Papageno*, single, mauve shaded rose; *Moddle*, deep purplish black, fine bells; *Rake*, single, quite black, distinct for its colour, with good bells; *La Grandese*, pure white, doubtless the finest of all the pure white Hyacinths. *Josephine*, deep crimson; *Gladiator*, bright red; *Prince Albert Victor*, deep red; *Romeo*, fine bright crimson; *Vuurbaak*, fiery red, as its name implies; *Gari-baldi*, *Albert Victor*, and *Linnaeus* are also fine in deep reds; and in pinks we find *Koh-noo*, semi-double; *Princess Clothilde*, *Agnes*, and *Reine de Naples* stand out prominently. In blues of various shades *King of the Blues* is very fine as a dark blue; *Lord Derby*, *Czar Peter*, and *Lord Palmerston* are particularly good in light blues; and *Starlight*, deep purplish violet with white eye; *Sir John Lawrence*, deep blue with white eye; and *General Haveloock* as a deep purplish black stands out as a grand Hyacinth. We may also add *Marie*, *Baron Humboldt*, *Mimos*, and *Prince Albert* as first-class sorts in the dark blue. Pure white Hyacinths are well represented by *Madame Van der Hoop*, *Queen of the Netherlands*, *L'Innocence*, *Mont Blanc*, *Alba superbesima*, *La Neige*, *Snowball*, *Mina*, and *Paix de l'Europe*; and in creamy whites, *La Franchise*, *Grandeur à Merveille*, *Anna Pawlowa*, and *Anna* are splendid varieties. There are only a few yellow Hyacinths worth growing; the best are *Ida*, *Obelisque*, and *Bird of Paradise*; and *Duc de Malakoff*, orange with a stripe of carmine down each segment of the bells, is very conspicuous. In lilacs and violets we find that *Haydn* still holds its position, and amongst newer kinds *Tollens* and *Arnold Prinsen* are very desirable.

Possibly the most attractive feature amongst the exhibits of Hyacinth is the class for twelve pairs of Hyacinths, ten bulbs in each of one sort, and it may well be imagined the effect of such sorts as the following:—*Marie*, blue; *King of Blues*, *Van Speyk*, double porcelain blue; *Pineman*, light blue; *General Have-*

lock, dark purple; Von Schiller, red; Koh-i-Noor, double deep pink; Noble par Morité, double pale pink; Haydn, violet; Mont Blanc, pure white; Prince of Waterloo, double pure white; and Ida, yellow, done, as they were in this instance, as well as they could be; in fact, they are the best of all the Hyacinths in the Exhibition.

Near these are some Hyacinths grown in what is called here "on double glasses"—that is, one bulb is planted in a glass vessel containing soil, another is placed at the base in the same soil, but the singular part of it is the lower one is placed on another glass vase which is filled with water, into which the foliage and bloom gradually develop themselves; in fact, it is one flower growing in the air, the other in water, but it certainly does not seem a particularly comfortable mode of existence for the one in the water.

Tulips are very numerous and fairly good; still they lack that neatness of arrangement which we are accustomed to see at home. Our old favourites stood out very prominently, such as Vermilion Brilliant and Potteskaker, both white and yellow; Keyzers-kroon, yellow and red; Proserpine, rose; Chrysolara, yellow; Belle Alliance, crimson; Queen of Violets and Van der Neer, deep purple. There are, however, very many varieties new or little known to English cultivators, some partaking of the points of excellence so much admired by florists in the late Tulips. Notably amongst these is Maria de Medicis, fine creamy white with brownish red; Grand Dno de Russia, purple and white; Rot Peppin, crimson and white; Marguis de Vassenrode, yellow and red; Jett van Rotterdam, fine purple and white; Spandouch, fine broad petals cream and brown; La Favourite, yellow and brown; Louis d'Or, red and yellow; Duc de Braucon, brown, red, and yellow; Comte de Vergennes, rose and white, very pretty; Fabiola, fine purple and white; Epaminondas, crimson and white; Rouge Louisa, rose; Pierrot, rose and white; La Cœur de France, light brown and yellow; Globe de Rigand, purple and white, fine shape; Rose Gris de lin, rose edged cream, good. The above are all single. Many double Tulips are also shown, but they are not up to our taste, except a very few, such as Tonnoel, Imperator, and Rex Rubro-rum. La Candeur and Blanche Hérite, a good pure white; La Parasite is also good, similar in every way to Keyzers-kroon in form and colour.

We now come to Narcissus, but which are not very effective exhibition plants, and there are but a few in advance of our well-known sorts. The white Borealis is distinct, pure white; Queen Victoria, white, yellow cup; Belle Princesse, yellow, orange cup; Newton, yellow, orange cup; Muscat orientalis, white, reddish orange cup, distinct; and Lord Canning, yellow, orange cup.

Dielytras are very good, and Lily of the Valley, although not numerous, are capitally done. There is also a collection of late or florists' Tulips, forced rather out of character, but still much to be admired.

We have already said that the collections of ornamental trees and shrubs are very good. Some of the Conifers came to the front, and seemed to grow more freely and to be of better colour than in England. This may be said especially of the variegated kinds, such as Thuja Vervaneana, of which there are several plants varying in height from 6 to 14 feet; Cupressus Lawsoniana aureo-variegata, of which there are also a good many beautiful examples splendidly coloured. The collections of Messrs. M. Koster & Son and A. E. Barnard & Co. contain plants of many of our popular sorts from 12 to 15 feet high. One exhibitor (Cornelius Ottolander) shows 425 species and varieties, and another (W. J. Ottolander) 600, some of the latter approaching each other too closely to be worth preserving under different names. G. J. Alberts also shows a large collection, in which all the genera are well represented, although the specimens are small. M. Van Hoff has among others fine examples of Thuja elegantissima and Cephalotaxa Fortunei. M. de Jager's most interesting plants are Retinospora leptoclada and R. plumosa aurea. In addition to the above-named plants the following struck us as the best—Retinospora filifera, R. plumosa, R. obtusa, R. obtusa aurea, Abies Tsuga, A. pyramidalis, A. pendula, Taxus canadensis aurea, T. baccata apiculoides, T. verticillata, T. cuspidata, T. cuspidata brevifolia, T. erecta aureo-variegata, T. elegantissima aureo-variegata, Juniperus drupacea, Cupressus Lawsoniana aurea, C. L. Bamberiana aurea, C. L. lutea, Pinus Koraiensis, Picea polia, and Thuopsis Standishii.

Hollies, both green and variegated, are numerous and handsome; the principal exhibitors being J. W. Ottolander, C. Ottolander, Kieseppa, A. E. Boer, G. H. Vanulsteke, and A. Koster. The nomenclature is bad, and the same kind is often found under two or three different names. Among the best are I. pendula aureo-maculata, I. compacta aureo-marginata, I. laurifolia aureo-maculata lucida, I. rubricaulis aureo-marginata, I. undulata aureo-maculata, I. longifolia argenteo-maculata, I. latifolia argenteo-marginata, I. rotundifolia, I. nobilis aurea, I. planifolia, I. camelliifolia, I. crenata rotundifolia aurea, I. Donningtoniensis aureo-maculata, I. Madame Prist, I. aureo-marginata robusta, I. serratifolia aureo-marginata, and I. myr-

tifolia aureo-marginata. The commoner sorts of Hollies abound, some of them from 10 to 20 feet in height.

There is a neat collection of Buxus and some good weeping trees from C. Ottolander & Son, but the sorts are all well known in England, and Aucubas in berry are plentiful and good. Of Magoulias there is one collection only, all of the early-flowering deciduous kinds, but they are not yet in bloom. Rhododendrons and Roses are not plentiful, but the varieties are good and well flowered, the Roses being standards in pots. Fruit trees are well represented by the following growers—Galeeloot, Boer, Gaucher, De Wilde, and others. There are standards, pyramidal, cordons, and almost every form of these, useful, ornamental, and fantastic. The latter word may also be applied to sundry Box trees which had been clipped and tortured into the form of archbairns, &c.

Another exhibition worthy of notice is the fine lot of well-preserved Apples from Signor Francesco Cirio of Turin. These are as fresh as when newly stored. They are kept in wheat flour, but before being stored they are dipped in a solution, the nature of which Signor Cirio does not divulge, for the purpose of destroying all insect and fungoid life, and then dried. On the same table is a large collection of artificial fruit, remarkably well modelled and coloured, the weight of each specimen being the same as that of the natural fruit. This was sent by Signor Garnier-Vallette of Turin. In a gallery of the large building is a collection of works on floriculture, the dates commencing early in the seventeenth century, and reaching down to the present day. Some of them are copiously illustrated, and there are volumes with coloured portraits of the Tulips which during the mania in Holland were the subjects of so much wild speculation.

EARLY WRITERS ON ENGLISH GARDENING.

No. 30.

JOHN CLAUDIUS LOUDON.

FIFTY years have passed since the writer of these notes received an encouraging letter from Mr. Loudon, with a copy of his "Encyclopedia of Gardening" as a return for communications to the "Gardeners' Magazine." Not long after that the writer met Mr. Loudon in society, and was deeply impressed by the evidences in his looks and manner that he was breaking down under an excess of mental work. That was no cause for wonder, inasmuch as at that time he was editing two monthly magazines, contributing to a weekly journal, and writing one of his Encyclopedias. It is quite true that the volumes are compilations, but the reading needed to find what was required and the arrangement of the materials was brain-harassing, and Mr. Loudon's correspondence with contributors was voluminous. He felt that the work was mastering him; and one of his utterances was, "You write for amusement, I write to live."

He was born on the 8th of April, 1783, at Cambelung in Lanarkshire, the residence of his mother's only sister, herself the mother of Dr. Claudius Buchanan (the author of a work entitled "Christian Researches in Asia"), whose labours in India in attempting to convert and instruct the Hindoos have made his name celebrated. Mr. Loudon was the eldest of a large family; and his father, who was a farmer residing at Kerse Hall, near Gogar, about five miles from Edinburgh, being a man of enlightened mind and superior information, was very anxious that he should have every possible advantage in his education. Strange to say, however, Mr. Loudon when a boy, though fond of books, had an insuperable aversion from learning languages, and no persuasions could induce him to study Latin and French. At this early period, however, a taste for landscape gardening began to show itself, as his principal pleasure was in making walks and beds in a little garden his father had given him; and so eager was he to obtain seeds to sow in it, that when a jar of tamarinds arrived from an uncle in the West Indies he gave the other children his share of the fruit on condition of his having all the seeds. While yet quite a child he was sent to live with an uncle in Edinburgh that he might attend the classes at the public schools. Here he overcame his dislike to Latin, and made extraordinary progress in drawing and arithmetic. He also attended classes of botany and chemistry, making copious notes, illustrated with very clever pen-and-ink sketches. Still he could not make up his mind to learn French, till one day, when he was about fourteen, his uncle, showing a fine French engraving to a friend, asked his nephew to translate the title. This he could not do, and the deep shame and mortification which he felt, and which he never afterwards forgot, made him determine to acquire the language. Pride, however, and a love of independence, which was ever one of his strongest feelings, prevented him from applying to his father to defray the expense, and he actually

paid his master himself by the sale of a translation which he afterwards made for the editor of a periodical then publishing in Edinburgh. He subsequently studied Italian and paid his master in the same manner. He also kept a journal from the time he was thirteen, and continued it for nearly thirty years, writing it for many years in French in order to familiarise himself with the language.

Drawing was his favourite pursuit, and in this he made such proficiency, that when his father at last consented to his being brought up as a landscape gardener he was competent to take the situation of draughtsman and assistant to Mr. John Mawer at Easter Dalry near Edinburgh. Mr. Mawer was a nurseryman as well as a planner (as the Scotch call a landscape gardener), and while with him Mr. Loudon learned much of gar-

dening generally, particularly of the management of hothouses. Unfortunately Mr. Mawer died before his pupil was sixteen, and for three or four years afterwards Mr. Loudon resided with Mr. Dickson, a nurseryman and planner in Leith Walk, where he acquired an excellent knowledge of plants. There he boarded in Mr. Dickson's house, and though remarkable for the nicety of his dress and the general refinement of his habits, his desire of improvement was so great that he regularly sat up two nights in every week to study, drinking strong green tea to keep himself awake, and this practice of sitting up two nights in every week he continued for many years. While at Mr. Dickson's he attended classes of botany, chemistry, and agriculture.

In 1803 he first arrived in London. The following day he



Fig. 88.—JOHN CLAUDIUS LOUDON.

called on Mr. Sowerby, Mead Place, Lambeth, who was the first gentleman he visited in England, and he was exceedingly delighted with the models and mineralogical specimens, which were so admirably arranged as to give him the greatest satisfaction from his innate love of order, and he afterwards devised a plan for his own books and papers, partly founded on that of Mr. Sowerby, but much more complete.

As he brought a great number of letters of recommendation to different noblemen and gentlemen of landed property, many of them being from Dr. Coventry, with whom he was a great favourite, he was soon extensively employed as a landscape gardener, and his journal is filled with accounts of his tours in various parts of England. There never lived a more liberal and thoroughly public-spirited man than Mr. Loudon. He had not a single particle of selfishness in his disposition, and in all his actions he never took the benefit they would produce to himself into consideration. When writing a book his object was to obtain the best possible information on the subject he had in hand, and he was never deterred from seeking this by any considerations of trouble or expense.

When Mr. Loudon first arrived in London he was very much

struck with the gloomy appearance of the gardens in the centre of the public squares, which were then planted almost entirely with evergreens, particularly with Scotch Pines, Yews, and Spruce Fir; and before the close of the year 1803 he published an article in a work called "The Literary Journal," which he entitled "Observations on Laying-out the Public Squares of London." In this article he blamed freely the taste which then prevailed, and suggested the great improvement that would result from banishing the Yews and Firs (which always looked gloomy from the effect of the smoke on their leaves) and mingling deciduous trees with the other evergreens. He particularly named the Oriental and Occidental Plane trees, the Sycamore, and the Almond as ornamental trees that would bear the smoke of the city, and it is curious to observe how exactly his suggestions have been adopted, as these trees are now to be found in almost every square in London.

In 1804, having been employed by the Earl of Mansfield to make some plans for altering the Palace gardens at Scone in Perthshire, he returned to Scotland and remained there several months, laying out grounds for many noblemen and gentlemen. While thus engaged, and while giving instructions for planting

and managing woods, and on the best mode of draining and otherwise improving estates, several ideas struck him, which he afterwards embodied in a book published in Edinburgh by Constable & Co., and by Longman, Hurst, Rees, & Orme in London. This, then, was the first work of Mr. London's presented to the public through the Messrs. Longman, with whom he continued to transact business of the same nature for nearly forty years. The book alluded to was entitled "Observations on the Formation and Management of Useful and Ornamental Plantations; on the Theory and Practice of Landscape Gardening, and on Gaining and Embanking Land from Rivers or the Sea."

Before Mr. London left Edinburgh he published another work, entitled "A Short Treatise on some Improvements lately made in Hothouses." This was in 1805, and the same year he returned to England. On this second voyage to London he was compelled by stress of weather to land at Lowestoft, and he took such a disgust at the sea that he never afterwards travelled by it if it was possible to go by land. He now resumed his labours as a landscape gardener, and his journal is filled with the observations he made and the ideas that suggested themselves of improvements on all he saw. Among other things he made some remarks on the best mode of harmonising colours in flower gardens, which accord in a very striking manner with the principles afterwards laid down by M. Chevreul in his celebrated work entitled "De la Loi du Contraste simultané des Couleurs," published in Paris in 1839. Mr. London states that he had observed that flower gardens looked best when the flowers were so arranged as to have a compound colour next the simple one, which was not contained in it. Thus, as there are only three simple colours—blue, red, and yellow—he advises that purple flowers, which are composed of blue and red, should have yellow next them; that orange flowers, which are composed of red and yellow, should be contrasted with blue; and that green flowers, which are composed of blue and yellow, should be relieved by red. He accounts for this on the principle that three parts are required to make a perfect whole, and he compares the union of the three primitive colours formed in this manner with the common chord in music, an idea which has since been worked out by several able writers. He had also formed the plan of a "Pictorial Dictionary," which was to embrace every kind of subject and to be illustrated by finished woodcuts printed with the type.

In 1806 Mr. London published his "Treatise on Forming, Improving, and Managing Country Residences, and on the Choice of Situations appropriate to every Class of Purchasers. With an Appendix containing an Inquiry into the Utility and Merits of Mr. Repton's Mode of Showing Effects by Slides and Sketches, and Strictures on his Opinions and Practice in Landscape Gardening. Illustrated by Descriptions of Scenery and Buildings, by References to Country Seats and Passages of Country in most Parts of Great Britain, and by 32 Engravings." This work was much more voluminous than any of the preceding ones, and it was ornamented by some elegant copperplate engravings of landscape scenery, drawn by himself, which in 1807 were republished, with short descriptions, as a separate work.

During the greater part of the year 1806 Mr. London was actively engaged in landscape gardening, and towards the close of that year, when returning from Tré-Madoc in Carnarvonshire, the seat of W. A. Madocks, Esq., he caught a violent cold by travelling on the outside of a coach all night in the rain and neglecting to change his clothes when he reached the end of his journey. The cold brought on a rheumatic fever, which settled finally in his left knee, and from improper medical treatment terminated in a stiff joint—a circumstance which was a source of great annoyance to him, not only at the time when it occurred, but during the whole of the remainder of his life. This will not appear surprising when it is considered that he was at that period in the prime of his days, and not only remarkably healthy and vigorous in constitution, but equally active and independent in mind. While suffering from the effects of the complaint in his knee he took lodgings at a farmhouse at Pinner near Harrow, and while there the activity of his mind made him anxiously inquire into the state of English farming. He also amused himself by painting several landscapes (some of which were exhibited at the Royal Academy) and by learning German, paying his expenses—as he had done before when he learned French—by selling for publication a pamphlet which he had translated by way of exercise. In this case, the translation being of a

popular work, it was sold to Mr. Cadell for £15. He also took lessons in Greek and Hebrew. The following extract from his journal in 1806 will give some idea of his feelings at this period:—"Alas! how have I neglected the important task of improving myself! How much I have seen, what new ideas have developed themselves, and what different views of life I have acquired since I came to London three years ago! I am now twenty-three years of age, and perhaps one-third of my life has passed away, and yet what have I done to benefit my fellow men?"

Mr. London, during the length of time he was compelled to remain at Pinner, became so interested respecting English farming, and so anxious that the faults he observed in it should be corrected, that he wrote to his father stating the capabilities of the soil and the imperfect state of the husbandry, and urging him to come to England. It happened that at this period the farm called Wood Hall, where he had been staying so long, was to be let, and Mr. London, sen., in consequence of the recommendation of his son, took it, and removed to it in 1807. The following year Mr. London, who was then residing with his father at Wood Hall, wrote a pamphlet entitled "An Immediate and Effectual Mode of raising the Rental of the Landed Property of England, and rendering Great Britain independent of other Nations for a Supply of Bread Corn. By a Scotch Farmer, now farming in Middlesex." This pamphlet excited a great deal of attention, and General Stratton—a gentleman possessing a large landed estate called Tew Park in Oxfordshire—having read it, was so much interested in the matter it contained that he offered him a portion of his property at a low rate, in order that he might undertake the management of the rest, and thus introduce Scotch farming into Oxfordshire.

The farm which Mr. London took from General Stratton, and which was called Great Tew, was nearly eighteen miles from the city of Oxford, and it contained upwards of 1500 acres. "The surface," as he describes it, "was diversified by bold undulations, hills, and steepes, and the soil contained considerable variety of loam, clay, and light earth on limestone and red rock. It was, however, subdivided in a manner the most unsuitable for arable husbandry, and totally destitute of carriage roads. In every other respect it was equally unfit for northern agriculture, having very indifferent buildings, and being greatly in want of draining and levelling." At this place he established a kind of agricultural college for the instruction of young men in rural pursuits; some of these, being the sons of landed proprietors, were under his own immediate superintendance, and others, who were placed in a second class, were instructed by his bailiffs, and intended for land stewards and farm bailiffs. A description of this college and of the improvements effected at Great Tew was given to the public in 1809 in a pamphlet entitled "The Utility of Agricultural Knowledge to the Sons of the Landed Proprietors of England, and to Young Men intended for Estate Agents; illustrated by what has taken place in Scotland. With an Account of an Institution formed for Agricultural Pupils in Oxfordshire. By a Scotch Farmer and Land Agent resident in that County." In this pamphlet there is one passage showing how much attached he was to landscape gardening—an attachment which remained undiminished to his death, and how severely he felt the misfortune of having his knee become anchylosed from the effects of the rheumatic fever before alluded to. The passage, which occurs in the introductory part of the work, is as follows:—"A recent personal misfortune, by which the author incurred deformity and lameness, has occasioned his having recourse to farming as a permanent source of income, lest by any future attack of disease he should be prevented from the more active duties and extensive range of a beloved profession on which he had formerly been chiefly dependent."

Notwithstanding the desponding feelings expressed in this paragraph, Mr. London appears from his memorandum books to have been still extensively engaged in landscape gardening, as there are memoranda of various places that he laid out in England, Wales, and Ireland, till the close of 1812. Before this period he had quitted Tew, and finding that he had amassed upwards of £15,000 by his labours, he determined to relax his exertions, and to gratify his ardent thirst for knowledge by travelling abroad. Previously, however, to doing this he published two works, one entitled "Hints on the Formation of Gardens and Pleasure Grounds, with Designs in various Styles of Rural Embellishments: comprising Plans for laying-out Flower, Fruit, and Kitchen Gardens; and the Construction and Arrangement of Glass Houses, Hot Walls, and Stoves; with Directions for the Management of Plantations,

and a Priced Catalogue of Fruit and Forest Trees, Shrubs, and Herbaceous Plants; the whole adapted to Villa Grounds from One Perch to One Hundred Acres in Extent;" and the other, "Observations on laying-out Farms in the Scotch Style adapted to England."

Mr. Loudon entered on the farm at Great Tew at Michaelmas, 1808, and left it in February, 1811, General Stratton paying him a considerable sum for his lease, stock, and the improvements he had effected.

The Continent, after having been long closed to English visitors, was thrown open in 1813 by the general rising against Napoleon Bonaparte, and it presented an ample field to an inquiring mind like that of Mr. Loudon. Accordingly, after having made the necessary preparations, he sailed from Harwich on the 16th of March. He first landed at Gottenburg and was delighted with Sweden, its roads, its people, and its systems of education, but he was too impatient to visit the theatre of war to stay long in Sweden, and he proceeded by way of Memel to Königsberg, where he arrived on the 14th of April. In this country he found everywhere traces of war: skeletons of horses lay bleaching in the fields, the roads were broken up, and the country houses in ruins. At Elbing he found the streets filled with the goods and cattle of the country people, who had poured into the town for protection from the French army, which was then passing within two miles of it, and near Marienburg he passed through a bivouac of two thousand Russian troops, who in their dress and general appearance looked more like convicts than soldiers. He now passed through Swedish Pomerania, and on approaching Berlin found the long avenue of trees leading to that city filled with foot passengers, carriages full of ladies, and waggons full of luggage all proceeding thence for protection, and forming a very striking picture as he passed through them by moonlight.

He remained at Berlin from the 14th of May to the 1st of June, and then proceeded to Frankfurt on the Oder; here, at the *table d'hôte*, he dined with several Prussian officers, who, supposing him to be a Frenchman, sat for some time in perfect silence; but on hearing him speak German one said to the other "He must be English," and when he told them that he came from London they all rose, one springing over the table in his haste, and crowded round him, shaking hands, kissing him, and overwhelming him with compliments, as he was the first Englishman they had ever seen. He then proceeded through Posen to Warsaw, where he arrived on the 6th of June.

Afterwards he travelled towards Russia, but was stopped at the little town of Tykocyn, and detained there three months from some informality in his passport. When this difficulty was overcome he proceeded by Grodno to Wilna, through a country covered with the remains of the French army—horses and men lying dead by the roadside, and bands of wild-looking Cossacks scouring the country.

Mr. Loudon reached St. Petersburg on the 30th of October, just before the breaking-up of the bridge, and he remained there three or four months, after which he proceeded to Moscow, where he arrived on the 4th of March, 1814, after having encountered various difficulties on the road. Once, in particular, the horses in his carriage being unable to drag it through a snowdrift, the postilions very coolly unharassed them and trotted off, telling him that they would bring fresh horses in the morning, and that he would be in no danger from the wolves if he would keep the windows of his carriage close and the leather curtains down.

When he reached Moscow he found the houses yet black from the recent fire, and the streets filled with the ruins of churches and noble mansions. Soon after his arrival news was received of the capture of Paris and the entrance of the allied sovereigns into that city, but the Russians took this intelligence so coolly that, though it reached Moscow on the 25th of April, the illuminations in honour of it did not take place till the 5th of May. He left Moscow on the 2nd of June, and reached Kiev on the 15th; here he had an interview with General Rapp, on account of some informality in his passport. He then proceeded to Cracow, and thence to Vienna, after which he visited Prague, Dresden, and Leipzig, passing through Magdeburgh to Hamburg, where he embarked for England, and reached Yarmouth on the 27th of September, 1814.

During this long and interesting journey Mr. Loudon visited and took views of nearly all the palaces and large rural residences in the countries through which he passed, and he visited all the principal gardens, frequently going two or three days' journey out of his route if he heard of any garden that he

thought worth seeing. He also visited most of the eminent scientific men in the different cities he passed through, and was elected a member of the Imperial Society of Moscow, the Natural History Society at Berlin, the Royal Economical Society at Potsdam, and many others. I have often wondered that on his return home he did not publish his travels, as the Continent was then comparatively so little known that a narrative of what he saw, illustrated by his sketches, would have been highly interesting. Business of a very unpleasant nature, however, awaited him, and probably so completely occupied his mind as to leave no room for anything else. As he knew nothing of business of this nature it is not surprising that his speculations turned out badly, and for more than twelve months he was involved in pecuniary difficulties. I am unable to give all the details of his suffering during this period, as it was a subject he never spoke of, and the allusions to it in his memorandum books are by no means explicit. It appears, however, that after having made several fruitless journeys, including one to Paris in 1815, in the hope of recovering some part of the property, he was compelled to submit to the loss of nearly the whole, and that his health was very seriously injured by the anxieties he underwent.

About this time (1816) his mother and sisters left the country, and he having determined that in future they should reside with him, took a house at Bayswater called The Hermitage, which had a large garden annexed. His health was now seriously impaired, but his mind always seemed to acquire additional vigour from the feebleness of his body; and as he was unable to use so much exertion as he had formerly done in landscape gardening, he amused himself by trying experiments relating to the construction of hothouses, and by having several of different kinds erected in his garden.

In August, 1815, a paper had been published in the "Transactions of the Horticultural Society," by Sir George Mackenzie of Coul, "on the form which the glass of a forcing house ought to have in order to receive the greatest possible quantity of rays from the sun." This form Sir George conceived to be that of a globe; but as it seemed impracticable to make a hothouse globular, he proposed to make the roof the segment of a circle. Mr. Loudon appears to have been very much struck with this paper, but he saw faults in the plan which he thought might be amended, and he tried houses with curvilinear roofs of various kinds in order to ascertain which was the best. He also tried a house with what he called ridge-and-furrow glazing—a plan which has since been carried out to a magnificent scale by Mr. Paxton in the Duke of Devonshire's splendid conservatory at Chatsworth. While these houses were in progress he wrote a work entitled "Remarks on the Construction of Hothouses, &c.," which was published in 1817. Shortly afterwards he invented a new kind of sashbar, of which he gave a description, together with sketches of the hothouses and details of their construction, in a quarto pamphlet entitled "Sketches of Curvilinear Hothouses, &c.," which was published in 1818. The profits of this bar he was to have shared with the ironmonger by whom it was sold, but I believe he never reaped any pecuniary advantage from it. He also published in folio another work in the same year entitled "A Comparative View of the Common and Curvilinear Modes of Roofing Hothouses."

He now seems to have determined on devoting his time principally to his pen, and he began to collect materials for the well-known "Encyclopedia of Gardening." It is probable that the first idea of this work had occurred to him while he was travelling from the great number of gardens he had seen and the various modes of gardening that he had found practised in different countries. At any rate, he determined to commence his work with a history of gardening and a description of the gardens of various countries, introducing illustrative drawings engraved on wood and printed with the text, this being, I believe, the first time any engravings, except mere outlines, had been printed in that manner. It was necessary in order to complete his plan that he should see the gardens of France and Italy in the same manner as he had seen those of the north of Europe, and for this purpose he determined to set out on another tour, though his health was at that time so very indifferent that one of his friends who saw him at Dover told him he looked more fit to keep his bed than to set out on a journey. Mr. Loudon, however, was not easily deterred from anything that he had resolved upon, and he proceeded by way of Calais and Abbeville to Paris, where he arrived on the 30th of May, 1819. After seeing everything deserving of notice in Paris, and becoming acquainted with many eminent men there

from the letters of introduction given to him by his kind friend Sir Joseph Banks, he left on the 10th of June for Lyons, in the Botanic Garden of which city he saw for the first time a living plant of the *Vallisneria*, which had not then been introduced into England, and which he had only seen in a dry state in the Hortus Siccus of Sir Joseph Banks. From Lyons he went to Avignon, and then he visited the celebrated fountain of Vaucluse. Afterwards he proceeded to Marseilles, and thence to Nice, from which city he sailed in a felucca for Genoa.

During the whole of his tour through France he visited the gardens everywhere, and made memoranda of everything that he thought would be useful for his intended work. He also made sketches of all the principal places, as he had previously done in the north of Europe.

Before leaving Genoa he procured a collection of Orange trees, which he sent to England for his greenhouse at Bayswater. He also saw for the first time slate boxes used for Orange trees in the garden of Signore di Negre near Genoa. In this city also he first met with his friend Captain Mangles, and joining him and Captain Irby they travelled together along the shores of the Mediterranean, leaving Genoa on the 6th of July in a felucca for Leghorn, where they arrived on the 8th, and thence proceeded through Pisa to Florence. During the whole of this tour Mr. Loudon's journal is entirely filled with descriptions of the gardens he visited, observations on the different modes of culture he saw practised, and various remarks on the habits of plants. One of the latter, which appears to me worth recording, is that he found *Saxifraga cressifolia* killed by a very slight frost in Florence, though it will bear a considerable degree of cold in more northern climates. From Florence he went to Rome, and thence to Naples, after which he visited Pompeii and Herculaneum, returning through Rome to Florence on the 21st of August. In these cities he visited all that is generally considered worth seeing, and, of course, did not neglect his favourite gardens.

About this period he saw for the first time a specimen of the trick often practised by the Italian gardeners, which is called by the French *Greffé des Charlatans*. This consists in taking the pith out of the trunk and branches of an Orange tree, and dexterously introducing through these a Rose tree or any other plant which it is wished shall appear to have been grafted on the Orange. Care is taken not to injure the roots of either, and if put cautiously into the ground both will produce leaves and flowers.

The next place he visited was Bologna, near which he passed a day or two with an Italian family who were enjoying the pleasures of the vintage. He then went through Ferrara to Venice, the first part of the road to which was bordered by hedges, in which were vines laden with grapes hanging from tree to tree. At Deux Ponts he embarked in a boat, and found the canal nearly all the way to Venice full of beautiful aquatic plants, among which was the *Vallisneria*. He was very much struck with the imposing view that he first obtained of Venice, including the grand square of St. Mark with its winged lion on a granite column. He also remarked the freshness and brilliancy of the paintings, and he noticed that the Post-office at Venice was built upon immense piles of logwood. The whole of the first night that he passed in Venice he was unable to sleep, from the number of persons that were singing in parties in the streets. The following morning he hired a gondola and went through the city, with which he was exceedingly delighted; for, as he says emphatically, "It is impossible to know what Italian architecture and Italian paintings really are without seeing those at Venice." Before leaving this splendid city he procured a living plant of the *Vallisneria*, which he placed in a little tin can containing water, and carried himself when he was travelling lest any harm should happen to it.

The next place he visited was Padua, where he saw the celebrated botanic garden. The road from this to Vicenza was bordered with hedges of *Hibiscus syriacus*. He had now entered upon the district where silk is chiefly produced, and found on each side of the road vast plantations of White Mulberry trees. Thence he proceeded to Milan, after which he visited the splendid gardens of Monza, with which he was most exceedingly delighted. He found here square pots universally used for the plants in the greenhouses in order to save room, and the tubs of the Orange and Lemon trees sunk in the ground to keep the plants moist. He found the Tuberoses most luxuriant and scenting the air. The botanic garden at Milan is small but well filled. On leaving Milan he visited the Borromeo Isles, but thought the beauty of Isola Bella somewhat exaggerated.

At Brussels he found the botanic garden in those days nothing, but he liked the park and the promenade on the ramparts, to which the botanic garden has since been removed. At Ghent he was also much pleased with the botanic garden, and with the generally luxuriant appearance of the plants in the private gardens near the town. In Bruges and Ostend he found little to see, and he returned to Bayswater on the 9th of October.

As soon as he reached home he began the "Encyclopædia of Gardening," at which he worked with little intermission till it was finished, though he was suffering severely at the time from chronic rheumatism in his right arm, the pain from which became at length so intolerable that in 1820 he was compelled to call in medical aid, and being recommended to try Mahomed's vapour baths, he went down to Brighton for that purpose. Here, notwithstanding the extreme torture he suffered from the shampooing and stretching, he submitted to both with so much patience that they were continued by the operators till they actually broke his right arm so close to the shoulder as to render it impossible to have it set in the usual manner, and consequently it never united properly, though he continued to use his hand to write with for several years.

(To be continued.)

BEAUTY OF GLAZENWOOD ROSE.

OTHER ROSARIANS besides myself will feel obliged to Mr. W. G. Smith for his letter on page 265. It proves that the true name of this sensational Rose is "Fortune's Yellow," for it appears to have been so pronounced by Mr. George Paul the moment he saw Mr. Smith's original drawing. Not many rosarians are "better up" in Roses than Mr. Paul; and since he exhibited the flowering plants at South Kensington which were pronounced identical, and has also arrived at the same conclusion by an inspection of the drawing, the question, to my mind, is settled.

The flower from which the figure was taken it appears must have been an accidental sport, with the striping, as Mr. Smith angosts, "not permanent." No doubt Mr. Woodthorpe was convinced that his Rose was distinct, and its possible inconsistency did not occur to him; and no one's disappointment can be greater than his, and especially if other sportive blooms are not produced of the same character as the original.

The colours of the figure in the "Flora des Serres" must be much exaggerated, for the bloom there represented does not bear even the faintest resemblance to Fortune's Yellow; yet Mr. Woodthorpe, as reported by Mr. Curtis, stated the colours of the sport to be yellow flaked with vermilion—"the colouration of a Tulip," and that he did not think that Mr. Smith's "brilliant plate had done justice to the richness of colouring of the Rose itself."

The facts resulting appear to be these: The Rose was prematurely judged, hastily sold, and much overcoloured. I shall endure my disappointment, but shall endeavour to profit by the mistake that has been made. I have bought many Roses in my time in reliance on the descriptions of others, but I will never again purchase a new Rose until it has been exhibited before competent and disinterested judges. I should like to thank Mr. Paul, Mr. Smith, and Messrs. Editors for their aid in bringing the matter to a decision.—ROSEARIAN.

OLD SEEDS AND NEW.

MUCH of the theory advanced by "B. G., Co. Down," is new to me. I know there are those who prefer old seeds of Melons and Cucumbers, but I was not aware that anyone preferred old seed of the Brassica tribe or of Beetroot.

It may be set down as a general rule that new seed germinates quicker and stronger than old seed does, and that plants raised from new seed attain a larger size before they produce fruit than those which are raised from older seed, hence the *prima facie* good grounds for supposing that old seed of Cucurbitaceæ is best; but we find on close examination that although plants raised from old seed fruit while they are of comparative small size, yet owing to their want of robustness it takes as long a period to grow them the size when they are capable of perfecting fruit as it does to bring those raised from new seed into a fruiting condition.

It is of no use for a plant to show fruit unless it has sufficient vigour to bring it to perfection. Fruit of good quality cannot be produced without abundance of healthy foliage. New seed of Cucurbitaceæ is generally acknowledged to pro-

duce the healthiest growth; therefore, I say, Unless you have shy-fruited varieties to deal with that new seed is as good as old, and perhaps a little better.

Besides the age of the seed, much depends on the quantity of seed a plant is allowed to bear, the season of its ripening, the health of the parent plant, the keeping of the seed, its treatment after sowing, &c. All of these points, and perhaps many more, are of greater consequence in the case of Cucurbitaceæ than whether the seed is six months or six years.

The bolting of Celery, Beetroot, Turnips, Cabbages, &c., is not a question of old and new seed. The principal cause, supposing it is not the fault of the immediate grower, is the manner in which the seed is produced. Take Turnips, for instance, which are frequently grown for seed in the following way: A lot of seed is sown thickly after some summer crop, when it is too late for the plants to bulb, but sufficiently early to produce seed in the following summer. This treatment, if carried on for a few generations, would of course in time produce plants which would refuse to bulb under any conditions. Is it, then, a wonder that a few should turn out badly even in the second or third generation?

To keep a stock from degenerating it is absolutely necessary to save seed only from prime roots. This costs money, and hence if you would have good Turnip seed you must pay a good price for it, and it is advisable to have it from the seedsmen whose name is attached to the particular variety, and consequently has his reputation at stake on it.—WM. TAYLOR.

PLANTING ORNAMENTAL GROUNDS.

The following is part of an address delivered by Mr. E. S. Carman before the New Jersey Horticultural Society:—

Incomparably beautiful as are the scenes of Nature, they cannot be copied because their majesty is the prime element of that beauty; the mountains cannot be copied—unless, indeed, molehills may be clothed with majesty. The river and the lake require Nature's grand distances for their effect; the valley is pleasing but by contrast, and since we cannot have the mountain we cannot have the valley. The sooner we abandon the idea of copying Nature—that cannot in any two places be found alike, or in any one place adapted to our grounds—the sooner we may learn that Nature's lessons are but our A B C's, which we ourselves must combine—by the love, sympathy, power, and education of which we are possessed—into original conceptions—original forms. Nature does not give us the problem which we are to solve; she merely gives us the raw material out of which we are, so to speak, to manufacture our grounds, the same as she furnishes the raw material out of which we are to manufacture our clothing. Let us select Nature's choicest gems just as we would select the choicest literature with which to store our minds, and, studying those as best we may, unite them in original designs and in accordance with the requirements, the characteristics, the expressions of each in the grounds of our homes.

While we cannot remove the "mountain glens and shady vales," or any of the objects that there together so awaken our appreciation of the charms of Nature, we should never lose sight of one principle that pervades her every aspect; it is variety, and this we may copy to our heart's content and yet be guilty of no "servile imitation."

Our first motive in embellishing our grounds is to render them as attractive as possible, that they may become the dearest spots on earth to us. Would that this simple doctrine were indelibly stamped upon the memory of all! To this end, if we are to have but fifty trees and shrubs, let every one be as different as possible. Let us have no pairs or triplets or quadruplets of anything—as if every tree needed a sentinel, or as if it were afraid to stand alone, or as if two or more individuals were needed for the completion of one another. Here to the right we have a Maple, there to the left, situated relatively to other objects precisely the same, another Maple—each the ghost of the other. Both are thrifty, shapely, fine. They are so nearly alike we can detect no difference. Nothing is to be learnt, no impression formed, from looking upon both that is not as well formed from looking upon one. Why, then, have both? Why not have in the place of one of them another species or genus that creates a new impression and gives additional food for pleasurable study? And yet these monkey grounds, as we may call them, are the rule whithersoever we go. A mile or so from my own residence is a lawn planted with Arbor Vitæ (in rows as we would plant an orchard), and with little else but Arbor Vitæ. They are perhaps 15 feet in

height, and all are of the same stiff, conical, monumental form. I never pass this place without being reminded of a burial ground with evergreen tombstones.

Everywhere we see the Weeping Willow. While in health, vigour, and youth few trees are more engaging. But let us picture a lawn upon which Weeping Willows are the only trees, and our impulse would be to weep too. If ever a tree expressed a sentiment the Weeping Willow expresses sorrow, and its place, to exist in numbers, is in cemeteries where we could fancy that it sheds tears over the graves. If ever a tree expressed those peculiarities which colloquially make up an "old maid," it is the Lombardy or Fastigate Poplar; fastidious would, perhaps, have been a more expressive specific name. A lawn planted with this tree alone, if it did not too much excite our pity from the above association, would be quite likely to excite our laughter. Thus it is while all trees are more or less beautiful, while many by their foliage, spray, habit, &c., convey an individuality that we connect with some sentiment which adapts them to particular situations, yet the pleasing effect of one tree of a species in our grounds is not proportionately increased by many of the same kind. Variety is the principle which, while it secures to each all the beauties that belong to it, imparts to our grounds a diversity of form and character only limited by their extent. Thus even in mid-winter we find much to observe, much to interest; while in spring, summer, and autumn our leisure hours are too few for the feast of delight and instruction to which we are ever allured. All trees and shrubs have their peculiar characteristics—their personalities; indeed, their manners. They are creatures that—planted perhaps by our own hands, reared under our own eyes—we learn so to love that we seek this one or that one as our mood may prompt. We accord to them sympathetic powers, and we fancy that they whisper sounds that our hearts frame into words, and it is by an easy stretch of the imagination that we may learn to fraternise with them as we do with friends, and to deeply deplore their loss.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

ALTHOUGH the ground was previously well saturated, we had another heavy rainfall last week. On two nights over 1½ inch of rain fell, and now the soil is in a worse state for kitchen-garden work than it has been at any time this season. We can readily gauge the saturation of the ground by the water in the stoke-holes, which has risen quite 3 inches higher than it had previously been this year.

The early Peas, which have hitherto moved very slowly indeed, have now assumed a very healthy appearance and are growing freely. Early Potatoes are also pushing through the ground. The earliest to appear was Fenn's Early Market. We have not previously grown this sort, but many of the best growers recommend it highly; and as Mr. Fenn's aim has been to raise sorts with short haulm, and which are in other respects highly suitable for garden culture, we hope it will answer for our rich garden ground. There are very few, if any, early kidneys superior or even equal to the old Ashleaved Kidney if it can be obtained true; but we have generally some other sort sent under this name of "improved" Ashleaves, which are generally more prolific, producing much more haulm, and are a week or ten days later. We shall, if weather permits, run the Dutch hoe through the ground between the rows of both Peas and Potatoes.

The crop of early Radishes has been cleared from the ground vineries, which has allowed air and light to penetrate to the Early Horn Carrots and Lettuce plants. The thinnings from the Lettuce have been planted out on a piece of prepared ground. We grow only the White Cos, as it is preferred to any other. Such young plants under glass protection are much assisted by being watered with tepid water, and this should be applied with a fine rose in the forenoon.

We have sown a breadth of Seakale; this is done annually to keep up a supply of plants for forcing. Some of the best plants are selected from this sowing for forcing, and those of smaller size are planted out for the ensuing year. We have also made a second sowing of Peas, including the early and midseason Marrows. The new variety Dr. MeLen ought to be grown in every garden, not only for its free-bearing habit but also for its excellent quality.

We shall plant out the spring-sown Cauliflowers, but would rather wait until the ground is in better order for the plants. We draw rather deep drills and plant in the bottom of them, which to a large extent protects the plants from frost and cold winds. Those who require a constant supply of Spinach should sow the seed between the rows of Peas at each sowing. Keep up a constant supply of salads. Mustard and Cress may now be

sown out of doors, and to insure sweet young Radishes seed should be sown at tolerably close intervals.

VINERIES.

As Vines are now so extensively cultivated by amateurs and others who have not had much experience in gardening matters, it is desirable that the details of this work should be full. The Vines are now starting into growth, and the first operation is to remove all growths that are not required, and which only rob the permanent growths of their due share of nourishment. The tendency of the young shoots is to grow straight up to the glass, and if they are not carefully bent down in their earliest stages, the work cannot be satisfactorily done afterwards. The growths must also be brought down very gradually, and they should be trained as nearly as possible at equal distances over the trelliswork, and not be crowded. The rods should be at least 2 feet 6 inches apart, and the lateral growths 18 inches from each other. It is well to stop the growths as soon as two leaves can be seen beyond the bunch, and the after-thinning of the laterals will depend upon whether the leaves are crowded or otherwise. When the growth is stopped the Vines make an effort at once to form fresh growths. These should be stopped at one leaf, and as a general rule all after-growth ought to be pinched close back.

Those who were able to start their Vines in January will now be in a position to thin the Grapes, and also to reduce the number of bunches on the Vines. This last operation should be performed before thinning has commenced. It is trying work to the inexperienced to cut away what seems to be a fair promise for a noble bunch of Grapes, but it is quite necessary, as overcropping is the certain ruin of Vines if it is persisted in. The berries ought also to be freely thinned, but this can only be well learned from experience. At this time a moist atmosphere is necessary in all houses, and a night temperature of 65° should be maintained.

GREENHOUSE AND CONSERVATORY.

Here the plants must be kept clean, and any appearance of green fly should bring the fumigating apparatus into requisition. Red spider has appeared on some young Azales and other plants in a cool house. We take the plants down from the stage two or three times a week, lay them on their sides, and then syringe the leaves well underneath. It is on the under sides of the leaves that the spider finds the most congenial food, and the syringe does not reach the insect well when the plants stand upright on the stages. Further, if the plants are syringed freely as they are upright, too much water may find its way to the roots and injure the plants. As they lie on their sides the water passes off without running into the soil. Any other plants which are attacked with insect pests may be cleansed from them without any delay, as all sorts of insects injurious to plant life breed with marvellous rapidity when the hot dry weather sets in.

The *Primula amena* and its varieties are very useful flowering plants at this time of the year. They are very pretty, easily grown, and delicately scented. The plants must be shaded from bright sunshine, and during the growing period they ought to be freely ventilated and be placed close to the glass. When the flowers open the stalks should be supported with nest sticks, as the trusses are too heavy for the slender stems, which fall about if they are not supported.

Tree or Perpetual-flowering Carnations have been potted-off from the cutting pots, and a few more cuttings have been put in for accession. The small side growths strike very freely in a little bottom heat under glass lights. Some of the varieties are of very slender growth, and before the plant is 6 inches high the stems fall over; it is better to place a small stick to steady them at once, and this will secure them from damage. The plants are very liable to be attacked by aphid, but this can easily be destroyed by fumigating with tobacco smoke or by dipping the plants in a solution of tobacco water and soft soap. Those who intend growing these useful winter-flowering plants will find the present a good time to purchase plants, as small plants bought-in now will make good flowering specimens for next winter. Some of the best sorts are *Guelder Rose*, pure white; *Rose Perfection*, very fine; *Scarlet Dufrance*, a splendid free-flowering sort; *Bride*, pure white; *Dians*, rose; *Empress of Germany*, large white rose flaked; *Gloire de Lyon*, scarlet flake; *King of the Belgians*, rose; *Miss Jolliffe*, flesh colour; *Prince of Orange*, yellow edged crimson; *Prolifera*, scarlet; *Souvenir de la Malmaison*, white; and *Vulcan*, red.

Stage Pelargoniums are now showing their flower trusses, which are much strengthened if the plants receive occasional waterings with weak manure water. To grow the plants well they must also be placed very near the glass, to have abundance of light and a free circulation of air, which does not mean that the plants should stand in a keen cold east wind, but in calm weather the ventilators may be open to their fullest extent. Not a trace of green fly should be seen upon any of the plants at this time; they must be quite free from insect pests before the flowers open, as fumigating causes the petals to drop.

We have sown *Cineraria* seeds. This may be considered

early to sow them, and so it is if small plants only are wanted; but to obtain good specimens by the new year the seeds must be sown at once in light soil composed of loam and leaf soil in equal parts. To obtain good plants of Chinese *Primula* the seeds should also be sown now in light sandy soil, and they will vegetate more freely if the pots are piced in a frame where they can obtain a little bottom heat. We are also busy amongst *Chrysanthemums*, potting those plants that require repotting, and trying out the growths of young plants intended for specimens. *Lupageria rosina* and the more scarce variety *alba* are now making plenty of young growths. The plants require liberal supplies of water, and the leaves are freely syringed with rain water once or twice a day. When the plants start into growth is an excellent time to repot any that require it. They succeed best in turfy fibrous peat, and ought to have a liberal shift. Care should be taken not to injure the roots during the operation of potting, the fresh compost should be pressed-in moderately firmly.

FLOWER GARDEN AND FLORIST FLOWERS.

Nearly all the bedding *Pelargoniums* have been moved into positions where the plants can be freely exposed to the weather, but where they can be protected from frost and superfluous wet. The other bedding plants sufficiently hardy are also moved out as we can find opportunity. The pits are now useful for Strawberry plants, which will be removed from the orchard house into them.

Anriolias require considerable attention. The largest proportion of plants are in frames facing the south, but as soon as the pipes on any of the trusses open the plants must be removed to frames facing the north. The expanded pipes will not stand the sun, nor will the plants themselves if the weather is hot; the leaves hang down very much if shading is neglected. On the first signs of distress in the plants a light tiffany shading should be thrown over the glass.

Tulips are flowering strongly, but the beds should be protected from too much wet, especially if the weather should be cold. The shadings are also wanted if frosts occur at night. A mulching of short manure prevents the soil from being splashed on to the leaves by the rain, and also keeps the roots in an equable temperature.

Pinks are spending for bloom, and considering the trying ordeal they have gone through this winter they look very healthy. We keep the ground free from weeds, and stir the surface occasionally with a small Dutch hoe.

Carnations and *Picotees* in pots are growing freely, but we do not care to turn the plants out in the open ground as yet; we may have snow and frost as we had last year about this time. We have very nearly finished planting out the *Gladioli*; the bulbs have been planted rather more closely together than they have usually been in former years.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

William Potten, Sissinghurst, Kent.—*Select List of Geraniums and other Bedding Plants.*

Charles Van Geert, Rue de la Providence, Antwerp.—*Catalogue of Hardy Ornamental Trees and Shrubs.*

Louis de Smet, Ledesberg-lez-Gand, Belgium.—*Catalogue of Novelties, and List of Agaves and other Succulent Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (C. B. P.).—"The Greenhouse Manual," published at our office, free by post if twenty postage stamps are enclosed.

MAIDENHAIR FERN (*Flora*).—The probable cause of the ends of the fronds shrivelling is that the air in which the plant is grown is too dry.

ORANGE WITHIN AN ORANGE (W. J. F. M. J.).—It is an occurrence not frequent, any more than it is for a small egg to be found inside a large one.

CINERARIAS (*Inquirer*).—They are inferior to many named varieties, and are not equal to usually grown from seed for greenhouse decoration.

WHITEWASH FOR GREENHOUSE ROOF (A Lady).—Common whitewash applied inside the roof is best. *Dahlia tuberosa* can be started upon a dung hotbed.

CYCNUS (*Clericus*).—The only instance that we know of grafts being so called is in Flavel's "Husbandry Spiritualised." It is there said, "These tender cycnus quickly take hold of the stock."

PLANT FOR AN AMATEUR'S GREENHOUSE (*A Lady Gardener*).—We should have half a dozen *Camelias*, an equal number of *Azaleas*, and a like number of *Espereyas*, with at least one each of the following:—*Acacia armata*, *A. Biceana*, *Correa Brillant*, *Ostrya racemosa*, *Daphne indica* *alba*, *Hydrangea hortensis*, *H. stellata* *rose-plena*, *Imantophyllum mictotium*, *Kalocotyles coccinea aspera*, *Lobelia floribunda*, *Fimbricia decemata*, *Polycalis Dalmaniana*, *Rhododendron japonicum*, *Staphylea trifolia*, *Staphylea trifolia*, and a few variegated plants, such as *Yucca aloifolia* *variegata*, *Hydrangea japonica* *variegata*, *Dambusa Fortunei* *variegata*, *Lomatia elegantiissima*, *Y.*

ronica Andersonii variegata, and Sedum Sieboldii variegatum. You may have of course Oleander, Orange, and Myrtle, which with "pot Roses, Pelargoniums, Heliotropes, Cinerarias, Primulas, and Fuchsias" would do well, also Chrysanthemums, all of which, except Fuchsias, would be outdoors in summer; and you may also have Cyclamen persicum, Calceolarias, Spiræe japonica, Dentaria gracilis, Lily of the Valley, with bulb plants and succulents, Begonias, &c. Begonias are fine plants for greenhouse decoration in summer. The temperature of a greenhouse in winter from fire heat ought to be 45° to 40°. The Vines will afford ample shade for the plants, planting the Vines 2 feet from the ends, and one in the centre of the front. Foster's Seedling is a good variety for a greenhouse, and the roots should be dug at Black Hamburg, or if you desire two kinds you may add Trencham Black.

TILANDSIA AEROLENTA (A. T.).—The plant showing for flower and not advancing, we can only conclude that the temperature is too low or that the roots are destroyed by overwatering. Afford a night temperature of 65° to 80°, and 70° to 75° day, with a rise to 85° or 90° from sun heat, keeping moderately moist. They will be sooner on the roots than plants and succulents. Give them soil, draining well, and employing a compost of turfy loam and half a part of sandy peat, with a fourth in equal proportions of pieces of charcoal and silver sand. Sprinkle lightly overhead twice daily, encouraging growth by a brisk moist heat, exposing the plant fully to the light.

ASTERS FALLING (Aster).—It is not too late to raise Asters. Seed sown now in a cold frame kept close until the seedlings appear, and then air admitted freely, will produce sturdy plants by the end of May or early June. If they are then planted in good soil, and duly attended to with water, they will flower finely in August onward. We do not know where you can procure plants.

AZALEA GROWING BEFORE FLOWERING (A Constant Reader).—It arises from the imperfect ripening of the buds, the plants being in the same condition as an over-riperous fruit tree, the flowers being cast. We know of no remedy other than to restrict the roots more, potting firmly, employing plenty of sand, and encouraging growth after flowering by a moist brisk heat, shading from bright sun, and after the growth is complete admitting light and air, keeping the soil in a cool state until the buds are cast. The growth is too free—the wood not thoroughly ripened.

RIDGE CUCUMBERS FALLING (W. E. C.).—The description you give coincides with that of the disease which is so mysterious and fatal in its effects. We should advise your employing good fresh loam in place of the vegetable soil for covering the manure in the trenches, and changing the moderately moist soil they are sown from to plain deep soil, removing all the weeds. We have not suffered from the disease. The only precautions taken against it are good fresh soil and a change of seed annually.

LILY OF THE VALLEY CULTURE (George Gray).—The ground should be well dug and enriched with leaf soil or well-decayed manure, choosing an open situation or one only partially shaded; avoid, however, a hot and dry soil. Plant in clusters of 3 to a dozen crowns, the crowns about an inch apart, the clusters 9 inches apart every way, planting so that the crowns are just covered with soil, and in planting press the soil gently around each crown. If you intend to take up the roots for flowering in pots, plant a dozen crowns in a cluster an inch apart, allowing the vines a foot distance between them. Plant in clusters of 3 to a dozen crowns, the crowns about an inch deep. The following autumn the clumps may be taken up, potted, forced, or placed in a greenhouse for early flowering.

CULTURE OF MACRAYA BELLA (W. E. C.).—It is a pretty shrub of slender growth requiring an intermediate temperature; though it does not succeed in a hot house best, it does best in a dry atmosphere, and it requires to be abundantly supplied with water, not, however, making the soil sodden, and maintaining a moist well-ventilated atmosphere, affording a light position. A compost of turfy loam, leaf soil, and sandy peat in equal proportions, with a sixth part of silver sand, is good drainage, will grow it well. The flowers are terminal, and therefore the shoots must not be stopped, but cut-in after flowering, repeating when young shoots are an inch long. It is rather tall-growing, not flowering freely if dwarf. The soil requires to be kept moist at all times.

ARBITUS AND BUTCHERS' BROOM.—"C. M." wishes to be informed where male plants of these can be obtained.

T. C. ALBURY, Esq., Lyddon House, Leeds, would be very much obliged to any Vine-grower who would forward to him during the next few weeks a few perfect flowers from any shy-setting Vine. Flowers of Canon Hall Muscat and Trencham Black would be welcome. He would be glad also to receive flowers from individual Vines which have proved very free-setters.

BURNING YOUNG TRAINED FRUIT TREES (A Constant Reader).—As a rule they require to be cut-back to about two-thirds of their length, but if the trees have been recently planted they will not break so freely, and it may be desirable to cut the young growths back to half their length.

JUREA SPECTABILIS OR COQUITO PALM (J. P.).—This is a very handsome Palm, and will thrive in a greenhouse temperature. Sow the seeds in a compost of two parts of loam, one part of peat, and a little silver sand to keep it open; place a little moss over the surface of the soil, do not allow the soil to become dry, and the pot ought to be placed in a temperature of 80° to 85°.

VINE SHOOTS CURLED (J. Mackenzie).—It is not easy to determine why a few Vines should be unsatisfactory when the remainder in the same house are flourishing so well. There are indications that the wood of last year was not thoroughly matured, and we suspect that that is the source of the evil of which you complain. The roots are also probably inactive, which may arise from too hot or too dry state of the border. Vines in inside borders frequently suffer from not being sufficiently watered, and the growth becomes dried and stunted. If the soil at all approaches dryness, especially at some distance below the surface, apply tepid weak liquid manure copiously, and preserve a genial atmosphere.

HORN-IN-HOSE POLYANTHUS (Inquirer).—The seed ought to be sown at once any time before the end of the month. If sown now the plants will flower next spring.

TRAINING IVY (H. B. H.).—Ivy requires to be trained through the meshes of galvanised iron net. It will not attach itself to wire as it will to paling or a wall.

ALPINE PLANTS (T. B.).—All the plants you name may be included in a collection of alpine and herbaceous plants; not knowing your object we cannot send all others. Send specimens over the surface of the ground at the rate of twenty seeds to each variety, to be benefited by a sowing in a shallow box.

NAMES OF PLANTS (A. W. B.).—We cannot name plants unless we see

their flowers, nor Ferns that have no spores. (W. F.).—Very fine specimen of *Habrothamnus elegans*. (T. K. E.).—1, *Jussiaea* sp.; 2, Apparently a variegated *Senecio reflexus*, but the specimen is insufficient. (Robb.).—1, *Agave-thea* capensis; 2, *Pyrethrum frutescens* or *canariense*. (S. G. O.).—1, *Ris Niphon*. (W. C.).—*C. Berberis aristata*; 2, *Evonymus japonicus variegatus*. (T. K.).—*Abutilon* sp. (G. O.).—1, *Asplenium bulbiferum*; 2, *Selaginella* sp. (M. C.).—*Scilla campanulata*. (Constant Reader).—7, *Cytisus canalicatus*. We cannot name the rest. (Ban Ouster).—1, *Heliolebor foetidus*; 2, *Prunus virginiana* (?). Other specimens quite insufficient. (M. F. H.).—*Celastrus Asotum*. (H. S. K.).—1, *Epidendrum*; 2, *Falcomaria angustifolia*. (P. P.).—Specimen insufficient. You send only leaves. (Subscriber).—*Cynoglossum ophiodioides*. (M. C.).—The Heath is a florist's variety, and we do not recognize its leaf. (Young Pencil).—1, *Spermatium africana*; 3, *Primula verticillata*. (J. Maddox).—*Ribes aureum*. (R. G.).—*Ametanther Botryopsis*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE CHICKENS.

It seems but yesterday that we were writing of the hopes and fears for the great shows of the past season; but so quickly does the time go on and the seasons succeed each other that we find once more, and on our tables, the letters from distant poultry yards, and we read that the tidings are various and varied. We suppose that it will always be so, and that it will never be our lot to chronicle a chicken season either uniformly fortunate or the reverse. We know that the general opinion is that the times have been good this season, and doubtless in places this has been the case; but we have before us notes telling of dire failures, and how those who in last season came well out of the skirnish this time have been very unlucky. It is almost impossible consequently to speak with accuracy, yet letters are continually demanding that something must be said.

Large yards as usual have many chickens. The hens to lay, the hens to sit, the hens to nurse in such establishments are numerous, and it is not surprising that those who breed on the large scale which Mr. Acton Tindal, Mr. Sidgwick, Mr. Lingwood, and others do should have at all times a fair supply. Others, however, who farm their poultry on a more limited scale, who keep but one or two breeds, and are dependent upon their own stock hens, or upon the kindness of neighbours' or farmers' wives for their broody hens, with them often comes the real pinch and difficulty. There seems, too, to have been no exception this year to the old trial, for hens to incubate have been this season almost scarcer than ever, and eggs have been kept stored up, till age made them useless, in the hope of a broody hen turning up. Eggs have, however, been plentiful. Two-year-old hens in many yards laid in December and January with the freedom and regularity of pullets; but many failed in being fertile. We know of one breeder who has thrown away on 114 out of 116 Coloured Dorkings eggs for being germless. On the other hand, in the very next pen, where there were some Colours, not one egg has failed to be fertile, such is the glorious uncertainty of breeding. We can only once more repeat advice so frequently given—that a two-year-old cock must never be relied upon in the very early year. There are of course exceptions, but as a rule for January and February chickens cockerels must be used. We have letters, unsolicited, before us from Mr. T. C. Bunnell and Mr. Darby endorsing thoroughly this view. To return, however, to the most general impression, which we can call from many letters, we find that there are on the whole a fair proportion of chickens of most varieties, and that so far there is no prospect of the death of early birds such as we found in the past two seasons.

Dorkings seem to be plentiful. Mr. Cresswell wrote to us before leaving for Staley, saying his chickens were many and fairly early. Mr. Bunnell, too, we learn has had his usual luck in breeding, and will, we dare venture to prophesy, meet his annual needs whichever he shows. We understand, too, that Lady Grydard and Mrs. Acton Tindal have a good supply of Cochins chickens; and in Brahmas Mr. Horace Lingwood seems to have found time in the intervals of club correspondence to get, as his custom is, some good broods together; while in Light Brahmas, as long ago as the Aquarium Show Mr. Breeze told us that he had many chickens early hatched and doing well. Game, French, and Hamburgs seem on the whole to have hatched moderately well, the French being in many cases perhaps the scarcest, several fanciers writing us word that the broods have been very small. Spanish chickens we do not think are plentiful, but we have had no especial accounts that the past month. Of Polands we gather from the accounts that White-crested Blacks were the most numerous. Mr. Norwood tells us he has over fifty chickens doing well; while Mr. Darby has hatched some good broods also. Lady Dartmouth we believe has had very good all-round luck in her large establishment. Of the Variety class broods we have not heard much, Leghorns being perhaps as plentiful as any of them, and Malays and Silkies rather scarce.

We have heard, on the other hand, of dismal failures in many yards, and those well established. A well-known Cochins ex-

hibitor, whose name we are not at liberty to publish, writes: "I am quite tired of setting eggs, having had such terribly bad luck with them this year." From another county a well-known lady fancier writes: "I have had clear eggs, very many shell-less eggs, chickens die in the shells, paucity of broody hens—in fact, everything but chickens." While, to close the melancholy part of our catalogue, we quote from a letter received this morning from a very well known breeder and exhibitor of nearly a score of years' duration: "I have never before had such bad luck. I have nearly sixty hens put up for breeding, and I have not a chicken for every hen. Nest after nest of clear eggs I have had, and from runs where cockerels and two-year cocks are with the hens I have to tell you of the same bad luck. White Cochins have been the worst, if there has been one variety worse than another; while in the face of all this at the farms in the neighbourhood the hens have laid well and hatched well. As I had eggs so early I had hoped to have been well to the front this year, and am very vexed about the matter."

In conclusion we will mention two little matters which we gather from our friends' correspondence about this year's hatchings—nearly all seem to say that the chickens they have are unusually strong and hearty. Personally, we have not had one die or even ail, and this we bear has been almost generally the case; and then we are also told that egg purchasers have been less complaining than usual. We nearly all know doubtless how those who buy eggs expect often more than they get, but we are told that many vendors have had satisfactory letters this year in place of complaint, and one or two purchased sittings which have come under our knowledge have been singularly successful.

All we require now is pleasant and genial weather to make the youngsters grow, for we know of many broods which require some such start, and then we shall look forward to the chicken shows with pleasant feelings of anticipation.—W.

THE LANGSHAN FOWL.

THEIR brilliant black plumage, the whiteness and delicacy of their flesh, and the richness of their eggs are worthy of high commendation. After the Crystal Palace show it was suggested that a club should be formed in order to keep the race pure and make known its many excellent qualities. A meeting was accordingly convened at the Royal Aquarium, Westminster, on February 21st, when the rules which appear in your advertising columns were drawn up and passed. In January of this year a gentleman resident in Aberdeen, who is a great poultry farmer, received an importation of Langshans from a friend temporarily resident in China. He exhibited two pens of these birds at the Royal Northern Agricultural Show held there in February, and they were not only acknowledged as a pure and distinct breed, but were awarded the first and second prizes in the variety class for pure-bred fowls.

The Acclimatization Society does not exhibit birds at private shows, but a paper published by the Society in February gives an account of the poultry show held at the Palais de l'Industrie. It contains some interesting remarks on the Langshan, some specimens having been exhibited by MM. Pichel and Roger. These birds they speak of as magnificent; and in treating of the Langshan generally great stress is laid on the fineness of the flesh, the lightness of the framework, and the richness of the eggs.

A recent letter from China informs me that in the locality whence the Langshan derives the name by which it is known to Europeans it is held in great veneration as a fowl of sacred bird, as the Chinese offer of their best and most beautiful to their gods, and have always been jealous of parting with them. It is during moult that Europeans have the best chance, as they are then considered unfit for sacrifice. The writer adds, "Since we have kept Langshans we have been spoiled for the birds purchased in the markets. We do not now care to see what you call a Cochin on the table. The flesh of the Langshan is superior, and so is also its egg in size and quality. As for the Black Cochins you ask me about, there are no such birds in China. The Chinese say these birds are allied to the wild Turkey. I do not vouch for the truth of this statement, but when denuded of its feathers the Langshan has much the appearance of that bird, and a well-fed Langshan is certainly equal to even the most delicate Turkey put on table."—AN ADMIRER OF THE LANGSHAN, Southampton.

WANSEBECK POULTRY, &c., SHOW.

The annual Show was held at Morphett, on the Terrace (in a tent erected for the purpose), on the 14th inst., when the entries were nearly a hundred in advance of those of last year. The Show was very well attended, the place being crowded the whole of the afternoon.

There were two champion pieces of plate, one of which was won by Buff Cochins, the hen in which pen was a marvellous bird; the other going to a grand pair of Duckwing Game.

Brahmas were a fair lot; the first, an adult pair, were large and true to marking, and the hen particularly good on fluff and cushion. *Dorkings*, first a grand pair; the second hen was the best, but cock in bad order. Of *Spanish* there were but two pens, but these were very good. *Hamburgs* were a capital section and the entries large, the cocks in the Silver-spangles being particularly good in tail. There were several very good pens of Gold-spangles, but the first were as near faultless as we ever expect to find them. Silver-pencils were more regular in quality than we generally find them, but the Golden were not as good as we usually see northwards. Black Red won in the *Rame* classes, and the *Blue* and *White* birds being first. The cockerels were good, but the pullet (though gamey and full of *set*), rather ragged in feather. Beyond the cap *Duckwings* there was nothing striking in the next two classes, but single hens were a large and exceptionally good class. *Game Bantams* were good in all the classes. The pair of *Piles* in the Variety and the *Pile* in Single cocks were very grand in style and colour; and in the next class *Blacks* were first and *White-booted* second. Both pairs particularly good. *Cochins* won in both of the Single-bird classes. In cocks a *Spanish* was second, and in hens a *Dorking* obtained that position. *Ducks* were a mixed lot. A grand pair of *Aylesburs* were first, *Rouen* second, and *Carolinias* very highly commended.

Pigeons had a few classes, of which *Pouters* were first on the list, the winners being a *Blue* hen in grand form, and a second an equally showy *White*. *Carriers*—first a *Dun* cock good in eye and back waste; and second a *Blue*—a first promising young bird. *Turkies* were good class. First a very correct *Yellow*, and second a *Blue* good in head but a little foul on thigh. *Antwers*.—First a *R. d. Chequer*, very good in head but failing somewhat on the beak; second a *Silver Dun*. *Nuns* poor except the first hen; and *Magnias* a good class, though some abowed too great a familiarity with coal dust. In *Dragoons* first was a *Yellow* cock grand in head and colour; second a *Blue*, also good. The *Variety* class was excellent. First and champion cup a perfect little *White Owl*; extra first an *Almond* cock, which, however, showed the effects of the cold; and second a capital *Black Barb*. Of *Cage Birds* there was a capital collection, but the place was too cold, and many fine specimens showed the effects thereof. *Norwich* were very good; first a *Mealy* and second a *Jonque*, but the first in best form. *Marked Canaries* were first a *Jonque* and second a *Bull*, but four pointed birds. *Mules* were a grand class, very one being noticed; first a four-pointed *Light*, and second an almost clear *Jonque Goldfinch Mule*. The first-named was the best in the Show except that it looked shaly stained, otherwise nothing could have wrested the medal from it. In common *Canaries* there were some neat slender birds. The first and medal for best in the Show was awarded to a *Silver Lizard* in the *Variety* class; the second a very good created *Jonque Norwich*.

Fothergill's pens were used, and most was made of the room at disposal; Messrs. Nichol and Arkle, the Secretaries, being constantly in attendance.

POULTRY.—COCHINS.—Cup and 1. G. H. Proctor. 3. T. Pye. *BALTHAZAR FOOTBALL*.—1. J. Anderson. 2. Miss Coates. *Wk.*, J. S. Shaw. R. Shild. R. Rowth. De. G. H. 3. W. J. 4. W. J. 5. W. J. 6. W. J. 7. W. J. 8. W. J. 9. W. J. 10. W. J. 11. W. J. 12. W. J. 13. W. J. 14. W. J. 15. W. J. 16. W. J. 17. W. J. 18. W. J. 19. W. J. 20. W. J. 21. W. J. 22. W. J. 23. W. J. 24. W. J. 25. W. J. 26. W. J. 27. W. J. 28. W. J. 29. W. J. 30. W. J. 31. W. J. 32. W. J. 33. W. J. 34. W. J. 35. W. J. 36. W. J. 37. W. J. 38. W. J. 39. W. J. 40. W. J. 41. W. J. 42. W. J. 43. W. J. 44. W. J. 45. W. J. 46. W. J. 47. W. J. 48. W. J. 49. W. J. 50. W. J. 51. W. J. 52. W. J. 53. W. J. 54. W. J. 55. W. J. 56. W. J. 57. W. J. 58. W. J. 59. W. J. 60. W. J. 61. W. J. 62. W. J. 63. W. J. 64. W. J. 65. W. J. 66. W. J. 67. W. J. 68. W. J. 69. W. J. 70. W. J. 71. W. J. 72. W. J. 73. W. J. 74. W. J. 75. W. J. 76. W. J. 77. W. J. 78. W. J. 79. W. J. 80. W. J. 81. W. J. 82. W. J. 83. W. J. 84. W. J. 85. W. J. 86. W. J. 87. W. 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Nature that going one day into his garden just before a storm he found the bees crowding into the hives. About fifty counted from the best hive there was a middle-sized toad, which every now and again rose on his forelegs and made a dart with surprising quickness towards blades of grass. He was found to be devouring bees which rested on the grass-blades awaiting their chance to enter the hive. M. Brunet watched till twelve victims had been devoured; he expected the toad's voracity would soon be punished with a sting, but in vain. Objecting to further destruction he seized the toad by one of his legs and carried him to a bed of cabbage thirty metres off, where he might do real service among the caterpillars, &c. Three days after this, on going out to the hives, he found the same toad (which was easily distinguishable) at its old work. M. Brunet let him swallow only three or four bees, then carried him fifty metres in another direction. Two days later the "wretch" was again found at his post greedily devouring.

OUR DUTY TO OUR FOUR-FOOTED AND FEATHERED NEIGHBOURS.—No. 4. PIGEONS.

I WONDER much that there has ever been any cruelty shown to Pigeons, for there has travelled over the world a sort of sacred character attached to the bird—whether from Noah's Dove or other even more holy associations, it is difficult to determine; but so it is, just as the egg-seeking schoolboy of England will scarcely ever destroy the nest of the Robin. So far, beyond the British Isles, there is a special care and regard for the Pigeon. The Russian will not kill a Pigeon; Mahomedans everywhere would not on any account injure or kill the bird. The Venetians, from a well-known historical reason, feed the Pigeons of that city daily at a stated hour. And I have noticed much kindness and tenderness among farmers at a market shown to Pigeons. I go in thought to a market place in the east of England, an open uncovered square, where the truly busy East Anglian farmers used to be seen by the dozen, sample bags in hand, drawn from capacious pockets. Genuine farmers, dressed like farmers (of course I am speaking of some years since), farmers that might have stood many of them as types of John Bull for the pencil of Mr. Teniell, had *Punch* existed then, which it or he did not, and had Mr. Teniell wanted a specially good cartoon. East Anglia contains still the fairest of women in all England, with soft cheeks, delicate features, and, above all, well grown; and to match them fine, tall, rosy-cheeked, brown-bearded men. So different both to the less well-grown and less good-looking people of the west.

But I am wandering from the Pigeons and must hark back. Market was opened about three o'clock, the second feeding time of Pigeons in the day as all fanciers know. Not far from the market-place lived a painter and glazier, whose son was a sort of fancier in days when the Pigeon fancy, save in London, was not very far advanced—when a Ponter was a Ponter, that was all—when the object was to get specimens of as many varieties as possible, but the specimens were not what would be now termed very good. The young painter got all he could, and particularly liked diverse colours. His Pigeons had full liberty, and loved to sweep along the open market-place, and perch in the sun on the small central cross, and take from thence long low flights to their master's home, and to their left over the shop dedicated to paint pots and putty. The dry gravel of the sunny squares formed a grand parade ground for the Pigeons—such a place for cooing, strutting, bowing, crop-blowing, tail-spreading, and a display of all the pretty ways of the pretty birds. There, too, were given the sharp peckings of the cocks driving their wives to nest, well knowing they ought to be at home attending to their maternal duties, but who, like some human wives I have noticed, prefer playing the part of young ladies rather than that of mothers. Oh! I name no names. England requires a very wife and mother to do their duty, and young wives, you have played-out the young-lady part, so let it alone. That's all over with you, leave that game for younger and maiden players.

But I am again wandering and must go back to the Pigeons. There on the square, clean, clear, and empty, were in bright days the pretty Pigeons. The big, quiet, long-bodied Runts—called then and there Spanish Runts; then, too, tall Ponters, the cocks so often following and flirting with little Tumbler hens, just as I have seen tall, Ponter-blown, padded-breasted, full privates of the Life Guards Blue walking with some tiny naremaid in the parks. Verily Pigeons and human beings much resemble each other. Well, market day came, and didn't the Pigeons know that day! It was their feast day. From the farmers' hands fell, rolling through their plump fingers, the grains of maize to eat; and neither, between, and on their feet were the Pigeons picking up the wheat, or the barley, or the peas, or the beans. The farmers looked for the birds, loved the birds, "blessed the pretty creatures," told their children about them at home. Just as the Square of St. Mark is famous for its Pigeons so this county-town market-place became famous for its Pigeons.

Were the farmers inclined to kick or trample on the birds? Not a bit of it. These were too fat and kindly. "Let me have men about me that are fat; sleek-headed men, and such as sleep o' nights," said Caesar. Such are all, as a rule, kind not only to men but to birds and animals; they are not little lean wasps and waspish-tempered. Give me fat coachmen, fat sharp grooms, comfortably-covered gardeners—anything but plump-jacketed boys; they are detestable, and ought to be kept on half rations until thinner. Fat and goodness go together in this world; and the old painters always represent the angels as fat, so I suppose they go together in the next.

The Pigeons were great favourites with the farmers because of their beauty and great fatness, and pairs were brought to take home to cheer some sick child or grandchild at the farm in the great black fat fens. Now all this was as it ought to be, but it is not always so. Sometimes there is cruelty to the birds without intention, as when the new comer's wing is tied, and the bird put up with the rest in those very unsatisfactory lockers nailed to the end of a building. The bird tries to fly down with the rest, and breaks perhaps a leg or sadly bruises itself. Sometimes cruel boys tie crackers to the tails of Pigeons. Then there is the crowding cruelty of the dealers' cages, when a large number are put into the cage in the window, and there is pecking, and fighting, and crowding, and often starving and want of water too. But go to Leadenhall Market, and there, if things are as bad as they were six or seven years ago, there is cruelty enough in the crowding of poor birds of all descriptions; where you might, and I fear may, see fowls, Ducks, Geese, Pigeons, literally jammed together in cages with no room for movement. Ducks putting pityful heads back through the opening, asking either to be taken back to the farmyards or to be mercifully killed. Anywhere, anywhere out of such a world.

Then, fanciers, I turn to you. What about the overshowing of your birds? For you, eye, and cups and prizes, but death to the poor birds. If you enter them at far-distant shows go with them or send some trusty person with them. The best birds ever bred in England have been killed by overshowing. This is too bad (bad in every way), for we can ill afford to lose from the fancy splendid specimens. Then the fanciers of homing birds are not guiltless. Forcing their birds to over-long flights is surely very cruel. It is abusing a beautiful instinct—the love of home and of young—all for money, and often bets and gambling. Homing birds deserve better treatment, for they may some time or other be useful to their country, and, though not strictly fancy birds, are deserving of as great care as fancy birds. Think, then, of the cruelty of making these good home-loving creatures fly even nine hundred miles, as in the race from Rome to Belgium in 1868. "Of the two hundred liberated," says Mr. Tegetmeier, "not more than twenty ever returned." What of the 180? Some perched lonely on the Apennines, some died on the Alps, some dropped in Swiss hollows. Poor birds! trying so hard to get home—trying so hard to reach the little nest in their Belgian lofts. How they tried and still persevered in spite of weakness and hunger, till the fleet wing failed quite and they perished from man's cruelty. Never more, I trust, will there be such over-long races. As matters of business they would not be needed. The sore needs of a besieged city would never require such long flights. "Use, not abuse," must be your motto, homing fancier. Of the cruelty of the Pigeon-shooting matches I will speak next time.—WILTSIDE RECTOR.

TIMELY PREPARATIONS.

EVERY bee-keeper should prepare beforehand for coming events. Though bees in this locality were late in commencing breeding this year, and though the weather has been and is still very unfavourable for bees, we are expecting things to take a favourable turn for them. The fruit trees are well set with flower buds, promising a great show of blossom. Flower buds on sycamores are very abundant this year and swelling fast. The white clover plant of the fields should be strong, as it was not injured by frost last winter. If weather permit we shall have a year of honey. Last year we had unfavourable weather until the middle of June, afterwards a good yield of honey was obtained.

Whatever mode of management be followed, it is wise to make preparations in time. Hives should be ready for swarms and supers for stocks managed on the non-swarming system. On the swarming principle we provide about one-fourth more empty hives than the number of our swarming stocks, say twenty-five hives for every twenty stocks. The additional hives are used for second swarms and turn-outs. In fine honey seasons, when most of the stocks are heavy at swarming time and have their honey taken from them three weeks after, we use the hives a second time the same season by requeening them with the turn-outs. Hives thus used and managed are filled twice in a season. Two of the advantages of this system are—first, an early harvest of flower honey; and secondly, the hives are refilled with young sweet combs and virgin honey.

The same principle and management can be practised with bar-frame hives. All the combs can be removed for honey three weeks after swarming, and the empty bars returned to be re-filled. In bar-frame hives—indeed, in straw and all kinds of hives, the centre brood combs could be left for breeding purposes and the outside combs removed for honey. Better stocks and sweet young combs are obtained by the removal of the centre as well as the outside combs. A few pounds of sugar costing 1s. or 1s. 6d. given to the bees will enable them to make good the loss they sustain in the removal of the old brood combs.

For non-swarmers provide plenty of supers to place on hives before they are ready for swarming. Straw and wood supers are more easily managed than glass supers, but glass looks better than either wood or straw. A hint was lately given in this Journal to prevent the loss of swarms while supers are being filled. In all non-swarming hives we would have queens that cannot fly. This can be done by cutting a wing off each. Loss of wings will not cripple them in any way for indoor work. If the bees of any of the hives attempt to swarm the queen will go with them to the point of the flightboard and drop to the ground. The swarm will go without her and return as soon as it discovers its loss. The queen will probably crawl back into the hive. We have known one do so five times. Facilities to do so should be provided. A stone or piece of wood touching the ground and flightboard is all that is required, provided the hive is within a foot of the ground.

"But," someone may ask, "how is the queen to be caught?" If in a common hive the bees should be driven into an empty hive, the queen seized between the finger and thumb and deprived of a wing; then cast all back into the hive. It is simply the work of four or five minutes. In bar-frame hives she must be found by the withdrawal of one bar of comb after another till she is seen and winged. In both kinds of hives the process is simple and easy. In providing and preparing hives and supers guidecombs should not be forgotten, for they are of considerable importance both to swarms and in supping for honeycomb. —A. PETTIGREW.

CRUDE AND PERFECT HONEY.

I CANNOT forbear to reply in a few words to a statement which Mr. Pettigrew makes in the Journal for March 22nd. Here I read, "Bees in returning from the fields first drop their pollen and honey in the cells in the centre of their hives, afterwards convert it into honey, carry it aloft, and there store it up." In answer to this I will only state that last summer, when the supers were being filled by my bees belonging to the straw hive which gave me 1314 lbs. of virgin comb, although some bees may have first passed through the stock hive, I know that thousands never entered it on their way to the supers. As I stated in your pages last autumn, some supers were placed at the side of the straw hive and some over it. All those bees which entered the side supers alighted on the floorboard, which was much larger than the circumference of the stock hive, and passed into these supers direct with their burdens of honey. The pile of supers above rested on a Lee's square super, the corners of which projected over the top of the mother hive. This pile had been placed on a square of thick cardboard. The bees, a few days after the cardboard had been placed there, nibbled away one projecting corner, and until all the supers were filled and sealed a continuous stream of honey-bearers daily passed in at this open corner and discharged their burdens at once into the growing cells of the supers. How Mr. Pettigrew can reconcile this with his statement as quoted above I do not see. Certainly the honey stored in my supers was far from being crude; it was of finest flavour and aroma. —P. H. P., *Ogley Lodge, Hitchen*.

OUR LETTER BOX.

EGGS UNFERTILE (*Ignoramus*).—During the winter (December, January, and first half of February) if it be wished the eggs should be fertile a cock should have two, or at most three, hens with him, and even then all the eggs will not be fertile. If a cock be put down among seven or eight pullets he will probably make his selection and adhere to it. There is no mistake greater than to suppose there is no like or dislike in the case. Not only is dislike evinced by a cock, but it is persevered in, and unless the victim is removed she is always killed, if in confinement, or piece away and hide herself if at liberty. It is for a reason that where a cock runs with eight hens in the winter many of the eggs are clear—i.e., they are not impregnated. The clear unfertile eggs do not change under the hen. At the end of three weeks they are as bright and apparently as fresh as the day they were laid. The egg which has become rotten has had a germ of life developed; that has been destroyed by cold or neglect, and decomposition follows. There are some points that need clearing up. It is said that the presence of the cock is only necessary for a few days, and all the eggs will be fertile. It is so with Turkeys. Others say that when the cock is taken away the eggs soon become infertile. We have known a hen Turkey steal a nest, lay, and hatch every egg in confinement, and she had been in that confinement a month before she laid the first egg. On the other hand, we (for the experiment sake) shifted a hen from one pen to another three times; we put her on her eggs, and the produce showed three distinct paternities.

HEN'S EGGS FOWELLES (*J. D.*).—There is a pressure of blood upon the brain. The fowls are too fat. Give lettuce leaves and no barley, but a little barley meal and bran mixed twice daily.

DARK (*A. Foster*).—It is a species of millet, native of India, and known to botanists as *Panicum Miliaceum*. It is nourishing, but not more likely to promote egg-laying than other grain.

CURE OF GAPEZ (*W. E. C.*).—We have learned to jest at gapes by making free use of camphor. We give to a chicken in a very bad case a pill the size of a small garden pea. As soon as we see symptoms of gape we give the birds water to drink which is strongly impregnated with camphor, thus giving to the chickens that which was a favourite medicine with our great grand-mothers, "camphor julep." The treatment seems to explain itself. The gape or "gaping" is caused by the presence of small red worms in the windpipe. No medicine can reach them unless it does so by vapour. An hour after the chicken has swallowed the pill it smells of camphor. Camphor is a very strong vermifuge, and the worms die.

SHELL-LESS EGGS (*F. A.*).—The hens are probably too fat. If so, feed on less nourishing food and have a heap of lime rubbish for them to scratch in.

ADDRESSES.—Mr. Abbott, Fairview, Hanwell.

BAR-FRAME HIVE (*W. B. T.*).—We cannot state any preference. We have seen them all employed satisfactorily.

STRAW HIVES.—I would remind your writers and readers that straw hives require no ventilation in the winter, and also that they may be much more easily and cheaply protected from rain, cold, or heat than wooden hives. —E. H. B., *West Norfolk*.

STEWARTON AND CARB HIVES.—The correspondent "SCOTTS" page 244, possessed the octagon Stewarton well as square hive designated the "Carr Stewarton," and in reply to his queries, to prevent confusion, the terms "Stewarton" and "Carr" were alone used. Mr. William Carr, Newton Heath, Manchester, writes that his, presumably the original or "Carr" proper hive, to which no allusion was intended, is not "too cramped and small for practical bee-keeping," having a capacity of from 1200 to 1300 cubic inches without supers. The name "Carr Stewarton" seems unfortunate, leading to the mistake that it is the "Carr" on one side and the "Stewarton" on the other, while it is really neither. —A. RENNREWER, *BEZEE-KEEPEE*.

DOGS AND CATS (*Kittie*).—The cost would be according to the liberality of dirt. No one could give a precise reply to your query.

DART.—J. P.'s asks to be informed of the best way of keeping bats out of a church, and if they are to be killed how it is to be done.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.		Rain.	
	Bar. (at Sea Level).	Hygrometer.	Direction of Wind.	Shade Temperature.		Radiation Temperature.
	Dry.	Wet.	Temp. of Soil, 1 foot.	Max. Min.	In sun. On grass.	
April.	Inches.	deg. deg.	N. deg.	deg. deg.	deg. deg.	In. In.
We. 11	30.881	48.7 48.0	N. E.	48.0 59.0	44.8 165.4	39.8 0.149
Th. 12	30.894	48.2 50.0	E. S. E.	48.3 59.8	45.1 165.4	39.4 —
Fri. 13	30.981	46.5 48.0	S. S. W.	45.0 58.2	39.3 78.5	36.1 0.040
Sat. 14	30.868	47.1 45.9	N. E.	45.9 54.9	43.9 75.0	39.3 —
Sun. 15	30.094	48.3 50.0	E. S. E.	48.3 59.8	43.5 88.0	36.6 —
Mo. 16	30.774	44.7 39.2	S. E.	45.8 48.5	41.8 89.8	40.7 —
Tu. 17	30.619	43.7 39.0	N. E.	45.7 49.0	36.2 98.0	30.3 0.080
Means.	29.882	46.2 48.0	A. S.	48.5 52.9	40.1 86.8	36.4 0.210

REMARKS.

11th.—Slight fog and very dark for a short time about 8 A.M.; fair forenoon, but a short and slight thunderstorm at 1 P.M., with heavy rain; fine afterwards.

12th.—A very fine day and pleasant, though much colder.

13th.—Fair but dull day; rain commenced a little before 5 P.M., and continuing during the evening.

14th.—Fair but dull all day, and chilly towards night.

15th.—Fine morning; a fair but dull day; wind rather high at night.

16th.—Dull morning and forenoon, the afternoon a trifle brighter; starlight night but very cold, end wind high.

17th.—Fair and bright at 8 A.M., but only for a short time; a solar halo at 0.30 P.M.; dull, grey, cold, and windy afternoon, evening and night; a few drops of rain occasionally, but not a measurable quantity until after midnight.

A dull cheerless week, especially the last two days. Temperature generally about 4° colder than last week.—G. J. STMONS.

COVENT GARDEN MARKET.—APRIL 15.

A MORE lively trade doing, and prices have been well maintained. A few good samples of new Grapes have arrived, as also Peaches and Figs, the last-named from the Channel Islands. A slow trade for Cucumbers at lower rates.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	dozen	0 7 0	Nectarines.....	dozen	0 10 0
Apricots.....	dozen	0 0 0	Oranges.....	dozen	0 12 0
Chestnuts.....	bushel	0 0 0	Peaches.....	dozen	16 0 0
Currants.....	sieve	0 0 0	Peas (kitchen).....	dozen	0 0 0
Black.....	do.	0 0 0	desert.....	dozen	8 0 0
Pigs.....	dozen	12 0 0	Pine Apples.....	lb.	3 0 0
Pine Apples.....	dozen	0 0 0	Plums.....	dozen	0 0 0
Cobs.....	lb.	1 0 0	Quinces.....	bushel	0 0 0
Gooseberries.....	quart.	0 0 0	Raspberries.....	lb.	0 0 0
Grapes, hothouse.....	dozen	0 25 0	Strawberries.....	dozen	0 0 0
Lettuces.....	dozen	1 00 0	Walnuts.....	dozen	5 0 0
Melons.....	each	0 0 0	ditto.....	dozen	1 00 0

WEEKLY CALENDAR.

APRIL 23—MAY 2, 1877.

Day of Month	Day of Week		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.			
26	TH	Royal Society at 8.00 P.M.	60.5	36.1	48.3	4 43	7 12	6 16	3 48	15	2 20	116						
27	F	Royal Institution at 3 P.M.	59.2	36.0	47.6	4 41	7 14	7 43	4 3	13	2 29	117						
28	S	Royal Botanic Society at 3.45 P.M.	60.3	35.7	48.3	4 39	7 16	9 6	4 21	15	2 39	118						
29	SUN	4 SUNDAY AFTER EASTER.	60.4	37.3	48.9	4 37	7 17	10 25	4 45	16	2 47	119						
30	M	Zoological Society (Anniversary) at 1 P.M.	61.0	39.0	50.0	4 35	7 19	11 34	5 18	17	3 56	120						
1	TU	Royal Institution (Anniversary), at 2 P.M.	61.2	39.5	50.4	4 33	7 21	morn.	6 3	18	3 8	121						
2	W	Royal Horticultural Society—Exhibition and Fruit and Floral Committees at 11 A.M.	62.5	39.2	50.8	4 31	7 22	0 28	7 1	19	3 11	122						

From observations taken near London during forty-three years, the average day temperature of the week is 60.8°; and its night temperature 37.5°.

KITCHEN APPLES SUITABLE FOR A COOL CLIMATE.



THE interest of many of your correspondents' articles on fruit-culture would be much enhanced if they would give the name of the market town nearest to their place of abode. That interesting article on Apple culture, published in No. 835 of our Journal, loses much of its value because the writer has not given sufficiently precise information respecting his whereabouts. "I live," he says, "in a southern county." Who can possibly guess which of all the southern counties? "Soil deep sandy loam." But what kind of soil?—one provocative of canker or one in which the roots would delight to strike deep?

Information on several points is especially needed to promote the more successful culture of the Apple—the names of the Apples that succeed best in a given locality, whether adapted for cooking purposes or dessert; the kind of stock that seems to suits them; the length of time that intervenes between the year they are planted and their coming into bearing; the method of training most suitable to their style of growth; the time of year in which each variety becomes ready for use, and how long it will remain sound in the fruit-room; the names also of those varieties of Apples that have been tried and have failed to give satisfaction in that locality. We do not wish to hear only of successful culture; failures convey useful warnings.

"W. G." seems to have been unusually unfortunate in the persons he has dealt with. I have received a bundle of fruit trees every year for the last twenty-five years from the Sawbridgeworth nurseries, and only rarely indeed have any mistakes been made.

Whenever garden space is at all limited I think it is not desirable to plant many varieties of kitchen Apples. They remain for so long a time sound in the fruit-room that five or six kinds only are required to keep up a sufficient supply from the end of August to the beginning of July.

We have been frequently recommended in the pages of our Journal not to buy a large collection of different varieties of Roses—that duplicates of the best sorts would give more satisfaction. This advice is more especially true with regard to the purchase of Apples.

Skipton in West Yorkshire is my nearest post town. Climate not adapted for the cultivation of Wheat. The earliest Potatoes and Peas are not ready for use until the last week in June; Strawberries ripe in the second week in July. Soil, light black earth mingled with limestone gravel, about 18 inches in depth; subsoil, limestone gravel. The roots of almost all fruit trees are disposed to canker when they penetrate this subsoil.

Lord Suffield is the best early Apple. It is ready for use about the end of August and remains sound about two months. It entirely supersedes all the Codlins. Very large handsome fruit, melting, juicy, with a most agreeable flavour. The tree is hardy, and forms a most regular

pyramid on the Crab stock, on which it begins bearing fruit in three or four years from the graft. It also forms a regular-shaped healthy spreading bush on the Paradise stock, on which it bears even more abundantly than on the Crab and yields finer fruit.

This Apple is succeeded by Tower of Glammis. It is ripe about the end of October, and will keep till the end of January. Fruit large, juicy, with a perfumed flavour closely resembling that of Lord Suffield. It grows freely on the Paradise and forms a somewhat awkward-looking but prolific bush, which will begin to bear fruit the second year after it is planted.

Dumelow's Seedling is ready for use in January, and will remain sound and perfectly good and juicy till July. A few years ago the editor of the "Florist and Pomologist" held an election of different kinds of fruits. This Apple was placed first on the poll of kitchen Apples, so it is the premier baking Apple of England. It grows freely on the Paradise, and forms a beautiful, regular, prolific pyramid, which usually begins bearing fruit the second year after it is received from the nursery. I have thirteen trees of this variety; and it would have been greatly to the advantage of my fruit-room if I had planted more trees of Dumelow's Seedling instead of indulging my curiosity in the purchase of untried sorts. I am unable to state how far it succeeds on the Crab stock, as I am perfectly satisfied with its performance on the Paradise. It will, however, give finer fruit if it be trained upright against an east or west wall.

Although these three kinds will do all that can be required of Apples throughout the entire season, still there are three other sorts of such high excellence that they should not be omitted. Cox's Pomona on the Paradise forms a beautiful, healthy, compact bush which never fails to bear year by year. It is one of the best and most prolific of Apples. Ready in October, but does not remain sound very long.

Winter Hawthornden is naturally of so dwarf a growth that it requires all the vigour the Crab stock can give it. Here it grows next to Cox's Pomona, and forms a round compact bush about the same size as its neighbour. It comes into bearing when four or five years old from the graft, and if not overcropped will give some very fine large fruit. Here it has reached 17 ozs. I first saw this Apple growing in a garden near Ripon when every fruit seemed to be about that size. It bears freely, and is in use from November to the end of December. On the Paradise stock this Apple and Warner's King and Stirling Castle succeed well as two-branched lateral cordons trained along a wire about a foot from the surface as an edging to the border of a kitchen garden.

Cellini on the Paradise is the most beautiful-looking Apple, and the most abundant bearer of all that I have mentioned. Here it is trained upright against a wall, and in the autumn its red-streaked fruit are very ornamental. Its upright style of growth is better adapted for the pyramid shape than that of the bush. It will begin bearing as soon as it has grown a scrap of wood to bear from, and is in use until Christmas.

It is not pleasant to confess failures, and that is the reason, I suppose, why we hear so little about them. It is some consolation, however, to know that those who will take the trouble to read them may escape some disappointment. Small's Admirable as a bush has only yielded one fruit for the last ten years. It is of the Stirling Castle race, but by no means so good.

Ringer, bush, is a hardy, free-bearing, good Apple, like Lord Suffield, but not equal to it in size or flavour.

Rymer, very slow in coming into bearing, not prolific, and fruit small. Climate too cold for it.

Gravenstein declined to fruit. Requires a wall, I fancy. Bedfordshire Foundling grows freely on the Paradise. It has, however, taken some years to consider whether it will bear fruit here or not. The same may be said of Blenheim Pippin. Nelson's Codlin is not equal to Lord Suffield. Jolly Beggar and Gloria Mundi are still thinking whether the climate will suit them. These are all on the Paradise stock. Betty Gesson being a dwarf grower was purchased on the Crab. During the ten years it has been in my garden it has grown into a compact bush, but it has not produced a single fruit.

Keewick Codlin I have grafted to some extent with Lord Suffield, Stirling Castle, and Galloway Pippin. This last-mentioned variety was sent out four or five years ago by Messrs. Backhouse, from whom I received a pyramid on the Paradise stock which has made healthy growth, and the tree is now well furnished with fruit spurs, so I hope this kind will prove to be a success.

My gardener was delighted to read the account your Lincolnshire correspondent gave of an Apple styled Greasy Coat. He recognised it at once from the very accurate description given of it. A tree of that variety grew for many years against the west wall in the rectory garden, East Marton, until that garden was broken up. He says it was the most abundant bearer he ever saw, and well deserves to be again introduced into this neighbourhood.

Mr. Robson rejoices in his orchard and trees that yield Apples by the bushel; but what are all those to do who are not so fortunate as to possess an orchard? Plant one, and wait in all patience for an Apple pie for fifteen or twenty years? These days are far too hurried and tussy for such a long drawn-out process. I say, then, plant bushes and pyramids on the Paradise, and these dwarf trees for the first eighteen years will yield a larger number of Apples than the same kinds would produce if grafted on the Crab. Few people would care to provide for a supply of Apples in their garden for a longer period. It is surprising how soon these dwarf trees begin bearing, and what a quantity of first-rate fruit they will give. In 1873 I had 19 feet of unoccupied wall, so I planted there seven Apple trees on the Paradise—two of Dunselow's Seedling, Cox's Pomona, and Tower of Glammis, and one Cellini. All these came from the nursery, trained upright, each having five cordons. From these I gathered in 1874 twenty-six fine Apples, in 1875 seventy-seven Apples, in 1876 sixty-six fruit, and judging from the amount of flower they are now showing there will be quite as good a crop this year. This free bearing of fruit did not prevent them from making year by year a free healthy growth of wood.

It is, however, notorious that Apples on this dwarf stock do not always grow as they are wished, but remain piny and stunted. To a certain extent this fault may be accounted for in this way—there are Paradise stocks and Paradise stocks. Mr. Rivers in that most useful book of his, "The Miniature Fruit Garden," which has now reached the eighteenth edition, says, "There are fourteen kinds of Paradise stocks; five of these are remarkable for giving very dwarf trees, all the others giving dwarf healthy trees." So wherever Apple trees on any of these five very dwarf stocks are planted it is not to be wondered at that they should make but little progress year by year. To avoid such a disappointment as this the nurseryman should be informed for what purpose dwarf Apple trees are required, and doubtless he will send the most suitable trees, at any rate it is very much to his own advantage to do so.—C. M.

ERICA MEDITERRANEA.

This giant Heath is now in full bloom, and is worthy of a special note for two or three reasons, not the least important of which is its large size, for it attains to the proportions of a good-sized shrub, and forms a striking and important feature in a shrubbery, especially when planted in large clumps. It grows so fast, too, that young plants such as one usually ob-

tains from a nurseryman will in four years be as many feet in height; and when, as now, they are laden with large dense clusters of blossom they are very ornamental.

I have known persons to express a feeling of dislike to this Heath on the score of the colour of its flowers—a pale lilac, which is certainly somewhat tame when contrasted with the gay pink bells of *E. carnea*; but it should never be forgotten that we have ample compensation for this dullness of the flowers in their delicious perfume, which *E. mediterranea* possesses in a higher degree than any other Heath with which I am acquainted. Its various qualities combine to render it one of our prime favourites, worthy to rank high among spring-flowering shrubs.—EDWARD LUCKHURST.

EFFECTIVE ARRANGEMENT OF SPRING FLOWERS.

THE CROCUS.—A great variety of colours are found in this charming family—yellow, purple, white, blue, lilac, and other shades, either plain or with blotches and stripes. They produce an excellent effect either when planted separate or blended together. I once saw a mixed bed of Crocuses thinly planted and growing through a carpet of the green *Spergula pilifera*, which set off the flowers to the best advantage, and this bed had a different effect every day, for one day yellow would predominate, another day blue, and another day white, &c. The principal value of this bulb, however, consists in its suitability for planting near the margin or edge of flower beds so as not to require removing.

THE NARCISSUS family is numerous, and how charming is the gay Daffodil, the sweet single kinds—the white, red, pheasant-eyed Narcissus, and many others which merit a place in every garden. A bed of Narcissus with a band or ring of an early scarlet Tulip is very pleasing both near and at a distance.

THE SAXIFRAGES are a most desirable class of plants, which combine easy culture and profusion of blossom. They make cheerful beds by themselves, for there are various shades of colour. I once saw a bed of *Saxifraga crassifolia*, reddish pink, and the yellow Primrose blooming together, and it was a pleasing combination. Double Primroses make a beautiful bed, for we have yellow, white, lilac, and crimson. A bed of *Alyseum saxatile*, yellow, edged with *Gentiana acaulis*, rich blue, has a fine effect. Beds of white *Alyseum* edged with pale blue Pansies are good. Pansies in mixture with an edging of *Antirrhinum purpureum* are also attractive.

THE HEPATICA is in its glory in April. The effect produced with the red, white, and blue is quite delightful. I am surprised they are so rarely to be met with.

THE SCILLAS.—These lovely dwarf flowers are especially pretty. Their star-like forms with golden anthers have a good effect, and the white variety of the same habit looks well in rows, patches, or in small beds. A bed of white *Saxifraga granulata* associated with a pink-coloured Squill is distinct and pretty. Forget-me-not, an edging of Golden Feather, and mixed Polyanthus with an edging of double white and red Daisies, are also effective.

CROWN IMPERIALS are a noble tribe of plants, consisting of single and double kinds. The colours are red, orange, and yellow, also striped. The surface of the bed containing them should be covered with the Dog's-tooth Violet, both foliage and flowers of which are distinct and pretty.

ANEMONES.—These are highly ornamental, and are admirably adapted for producing a display during the early spring. The single-flowered varieties are crimson, scarlet, white, blue, purple, rose, blush, and are also variously striped. The foliage is elegantly divided. They yield a long continuation of bloom, and when grown in masses nothing can be prettier. They are easily cultivated and cheap.

A bed of mixed alpine Phloxes with an edging of *Nemophila insignis* makes an elegant picture. This class of Phlox is dwarf, neat, and uniform in habit, with pleasing shades of colour. An effective bed may be made by planting *Dielis spectabilis* and *Saponaria calabrica* together, with an edging of Golden Thyme. Another and equally effective bed is composed of scarlet and white Intermediate Stocks, with a band of yellow *Viola*. A bed of purple *Silene pendula* edged with *Iberis* (Candytuft) is always admired. A bed of Wallflowers is worthy of a place in every garden, for this is a sweet old flower, and there are now some distinct colours both double, semi-double, and single. Seeds of Wallflowers should be sown in April; Stocks, Alyseum, and Forget-me-nots in July; and *Saponaria*, *Silene*, and *Nemophila* in September.

When sowing it is a good plan, 'if only a small number of plants are required, to sow in boxes and protect in a cold frame during the winter. The plants may be lifted with a trowel with the rough soil adhering to the roots, and they will scarcely suffer from the removal when transferred to beds or borders in the spring. Primroses, Polyanthus, and Pansies may be raised by sowing seed in May; prick out the plants when large enough to handle, and they make strong plants, and most of them show their colours by the autumn.

This list might be extended, but I have only mentioned those plants that I know will flourish in and near large towns. With spring flowers, which can be provided with little trouble and expense, there need be no bare beds.—N. COLE.

KITCHEN GARDEN NOTES.

THICK versus THIN SOWING.—No greater waste in the kitchen garden is known to me than sowing good seed thickly. This does not apply to one kind of small seed more than another; and the waste is not only in sowing more seed than is necessary, but young plants which come up in a thick mass are always very much inferior to those which have sufficient space to fully develop themselves from the first. Sometimes the seed is suspected to be bad and is sown thickly so as to insure a crop, but this is a poor apology, because seed of so questionable a nature should never be depended on for a crop. When the seed is sown thickly the plants rise in a mass, and when they come to be thinned those left bend in the stem, fall down and get blown about until they are next to useless. Good produce need never be expected from young plants of this kind. Seeds of such crops as Lettuce, Cabbage, Cauliflower, &c., the plants of which are drawn and transplanted as soon as they can be handled, may be sown a little thicker than such as Carrots, Turnips, and other crops which remain on the ground. Does it not appear ridiculous to have two or three hundred plants coming-up in a 3 or 4-feet run of a row when not more than three or four plants will be ultimately required to form the crop?

ROUGH versus FINE SURFACES.—In sowing seeds the ground is as a rule, raked as fine as it can be made over them, and in making or finishing-off such as Onion beds, the ground is not only raked fine but the little rough pieces that escape are beaten down with the back of a spade. Those who practise this "neat finishing" should have been taught a lesson this wet spring. The first heavy rain that falls on a fine surface of soil causes it to cake over, and the wet after that runs off as from a board; and further, when the weather becomes dry this caked surface is baked nearly as hard as a brick, and how can seed be expected to grow, or plants develop properly in stuff like this? On the contrary, a moderately rough surface allows the wet to pass through and the soil does not "bake," consequently the young plants thrive satisfactorily. Baked surfaces look neat, but I never make the surface of any soil finer than it is made with the Dutch hoe.

CUTTING EARLY CABBAGES.—Some cut their early Cabbages at the lowermost leaves. This is not economical, because when cut so low the stems seldom sprout much afterwards; whereas, when they are cut up as far as can be done without injury to the head, and as many of the leaves are left as possible, there are soon many side heads emitted from the stem, and each of these ultimately becomes as useful in the kitchen as the first heads. Cabbages when properly attended yield gatherings from May until November.—A KITCHEN GARDENER.

THE NARCISSUS AT TOOTING.

ALL admirers of the old and great genus *Narcissus* are indebted to Mr. Barr for cultivating, to Mr. Burbidge for figuring, and to Mr. Baker for classifying and describing the several species and varieties now in cultivation. Old—very old—writers have also left us the records of their researches, Lobel, Gerarde, Parkinson, Linnaeus, Miller, Herbert, Haworth, and others having devoted much attention to the *Narcissus*; and how many poets have sung of its praises it would not be easy to determine, but some of them are mentioned in Mr. Burbidge's beautiful and instructive volume, which is devoted to a discussion of the history and cultivation of this hardy brilliant garden flower.

Mr. Barr justly describes the *Narcissus* as being "amongst the oldest and most beautiful of spring-flowering bulbous plants. It has for centuries been one of the most highly

prized garden favourites, and has commanded in an unusual degree the attention of the scientific botanist. During epochs when artificial gardening has been in the ascendant, *Narcissus*, like many other charming flowers, has had to yield to the inexorable goddess of fashion. At such times it has been saved from extinction by the fostering care of our botanic gardens and of those enthusiastic amateurs who love flowers not for what they cost, but for their intrinsic beauty, and who, while they do not ignore new introductions, discard not their old friends unless the new is an improvement on the old. The *Narcissus*, however, like many another neglected flower, is now re-asserting its position and claiming its proper place in the general economy of border decoration and as a cut flower for furnishing vases."

Surely no one can regret that these old flowers are re-asserting their position; in fact, it would seem impossible for any to do so who had seen them defiant of "March frosts" and "April showers," fresh, bright, and beautiful as they are now in the quarters at Tooting. And as to their adaptability for "furnishing vases," a bouquet now before me, culled almost at random from the beds, affords sufficient evidence that no other hardy garden flowers of the period combine such boldness yet elegance of form, such purity yet brilliancy of colouring, as do these. Coarse, perhaps, the common *Daffodil* may be, but coarseness cannot be fitly applied to one other of the forms of this extremely varied family.

The *Narcisseeae* at Tooting are grown in long beds with sunken paths between them after the manner of Asparagus beds. The soil is a deep alluvial loam, low-lying, and moist. The different species and varieties are grown in large masses, except, of course, some which are yet scarce, and the effect produced is extremely rich, the larger kinds being gorgeous when viewed from a distance, and the smaller exquisitely chaste when closely examined; in fact, the diversity presented by the many representatives of the genus is wonderful—dazzling without being gaudy, pure and quiet without being tame.

As a rule the single are much more beautiful than the double flowers. For instance, a bed of double *Daffodils* suggests no idea of the richer, equally bold, yet elegant *N. pseudo-Narcissus* var. (*obvallaris*) *maximus* grown in quantity. The perianth segments of the flower are $1\frac{1}{2}$ inch long and slightly waved, the corona or cup being 2 inches deep, expanded at the mouth, and crenulate, the colour an intense golden yellow. The plant is vigorous and flowers freely. For grassy banks and knolls, large irregular clumps of this fine single *Daffodil* would be extremely effective, and would cheer and brighten many an otherwise dark spot in the early days of spring. That is the richest of all the *Narcisseeae* now flowering in quantity at Tooting; but still larger and finer forms of it are found in Emperor, yellow; and Empress, white segments and yellow cup, real monarchs of the family, and highly worthy of cultivation.

The last-named belongs to the *N. bicolor* section, a conspicuous group, the flowers having white petals $1\frac{1}{2}$ inch long, and pure pale yellow cups $1\frac{1}{2}$ inch deep, expanded at the mouth and faintly crenulated; an extremely fine variety of this is *N. Horsfieldii*, a large, bold, beautiful flower, emphatically worthy of extensive cultivation. Mr. Burbidge informs me that this was raised from *N. bicolor* by a Lancashire weaver, and was sold after his death as a dower for his widow. It is undoubtedly a handsome flower, and is only surpassed in size by one other of this race—the *Empress* above named.

Next take from my bouquet two or three forms of *N. incomparabilis*. The single types of these are extremely chaste yet sufficiently cheerful. The perianth segments of these are large, flowing, and elegant, and the cups are small and more or less lobed. The creamy white form is known as the "single Phoenix." *N. i. var. semipartita* has sulphur petals and a yellow cup; and *N. i. arantiseus* is deeper in all its parts; the flowers measure about $2\frac{1}{2}$ inches across. A seedling paper-white variety is extremely chaste. The double examples of *N. incomparabilis* are bold commanding flowers, but lack the refinement of the single types. The variety in this section is both extensive and varied, and the flowers, especially for decoration in a cut state, are particularly appropriate. All the forms are also suitable for garden and shrubbery decoration.

Another extremely beautiful flower, especially for vase ornamentation, is *N. moschatus*. The petals of this are creamy white, $1\frac{1}{2}$ inch long, the cup being tube-shaped and nearly 2 inches deep, reflexed at the mouth and very slightly serrated; its colour is pale primrose, shading to cream at the base. It is a charming variety of the pseudo-*Narcissus*, and is singular in possessing the odour of beeswax. Resembling the above

and equally beautiful, is another variety of the pseudo-Narcissus—*cernuus*, but the cup is shorter, also the perianth segments, and the whole flower is more wax-like. The double variety of this is highly distinct, and, unlike some of the other doubles, has not the slightest approach to coarseness. The long tube-shaped cup is perfectly smooth and slightly reflexed at the mouth, the tube being filled with petals which do not protrude and give any appearance of raggedness. When growing it resembles a single flower, and its distinctness is not perceptible until closely examined or when placed in a vase, when it is certain to attract notice.

Amongst the large flowers two or three double varieties of the pseudo-Narcissus (*Daffodils*) remain to be noticed. The wild double Daffodil is smaller in all its parts than the ordinary garden Daffodil, which is probably of Italian or Spanish origin. These are only suitable for planting on grass and in woodland walks. Haworth's double Daffodil—*N. eyestentensis*—is, however, quite distinct and well worthy of cultivation in gardens. It is noteworthy that in this variety the crown segments are totally absent, and the perianth segments which compose the flower are, as Mr. Enbridge observes, "regularly superposed in six rows like the flower of a Lady Hime's Blush Camellia." The colour is pale sulphur yellow.

Totally distinct from any of the above are the smaller brilliant yellow forms popularly known as Jonquils. One of the most effective of these is *N. odorum*. The flowers are $2\frac{1}{2}$ inches in diameter, and are extremely bright: the flowers of the variety *rugulosus* are also large and intense in colour. These are the most effective of the section. Smaller are *rugulosus minor* and *Jonquillus*—the common sweet Jonquil, with its smooth stalk and slender flowers. It is remarkable that this alone of the numerous representatives of the genus should be so powerfully perfumed. There is also a double form, but the singles are the most effective both when grown in masses and in a cut state, and all of them are worthy of cultivation.

A few others before me remain to be noticed—namely, the Poet's Narcissus. These are the most chaste of all, and are general favourites. No hardy cut flowers of the same season of the year are so valuable for general decorative purposes as these. They associate advantageously with almost any other flowers and Ferns; and the commoner sorts are grown by the acre for supplying the London market. The most noticeable of the varieties at Tooting are *N. cernuus*, *aurantinus*, *tripodalis*, and *stellaris*, which are all of the same ivory-white colour with yellow cups margined with various shades of red, but varying in the size and shape of the flowers and their time of flowering. The double form of this is one of the latest and finest of all, the flowers resembling Gardenias. Many other forms are also flowering, while some have faded, and others remain to open.—VISITOR.

NATIONAL AURICULA SOCIETY'S SOUTHERN SHOW.

CRYSTAL PALACE, APRIL 24TH.

ALTHOUGH critics have had their "ding" at special shows, and have pronounced them as being "worthy of encouragement and support" (when considered in connection with the Pelargonium Society), and with the same breath have considered them, when in connection with the National Rose and Auricula Societies, as having a tendency "to degrade horticulture, and likely in the long run to do more harm than good," yet the first southern show of the Auricula Society has put such critics "out of court," and it is probable that the Rose Show will similarly interfere with the correctness of the prophetic speculations which have been indulged in. One might almost regard the literature of special shows as being essentially singular, for when we find one famous phrase ("florists' flowers are at a discount in the south") bring down stern rejoinders, yet another remark to the same purport from a still more celebrated grower—namely, that "Auriculas appear to be northern lights that flicker but feebly in the sunny south"—meets with silent acceptance. It is well that plain truths should be uttered, for, as often happens, renewed efforts follow to disprove them until they can no longer with justice be repeated. It is especially pleasing when such is the result, and additionally so if it is accompanied by an all-round shaking of hands and a general acknowledgment that if everybody was wrong in one sense they were right in another, and the desire of all is admitted to be identical—namely, that the cultivation of florists' flowers should receive an impetus, and their exhibition be a success. That is, after all, what all true florists wish, and if one can do more than another to accomplish that end none can be otherwise than gratified that there is such an one in the ranks.

Special shows like the present one really promote horticulture in the most direct and practical manner. They take its departments in detail, and perfect them the more quickly by a concentration of effort incident to their nature, and in the end do good and not harm. They do good also in the most manifold happy meetings, when, as Mr. Horner once justly stated, much pleasure is derived from the "simple source of flowers," where old acquaintances are renewed and new friends are made, and the object of all is strengthened. By the well-directed efforts of the promoters of this Show florists' flowers are for the time at a premium in the south, and Auriculas have not "flickered feebly," but have shone brightly—the dawn, let us hope, of a longer and a better day for many highly beautiful but too much neglected flowers.

The Show was indeed a success, such a Show as has probably never been seen before. North and south united heartily, and the growers sustained their fame and encouraged the executive to make further and special efforts to popularise one of the most charming of hardy flowers. The Exhibition was arranged on six long tables in the transept near the theatre; a better place in the Palace could not have been found, nor a better mode of arrangement adopted. Every possible encouragement was given by the Committee to induce competition, for the prizes were declared open to all, whether subscribers to the Society or not, and in fact conditions which have been usually imposed were in this instance to the utmost possible extent permissive in their character; in a word, the regulations and conditions were framed in a spirit of liberality which rendered them worthy of meeting with an unanimous response. The northerners exhibited splendidly, Mr. Horner almost "sweeping the decks," and the cut-florist Ben. Simonite brought flowers from the murky atmosphere of Sheffield which for purity and refinement were only a few points behind the Kirkby Malzeard plants. Of the southerners Mr. Douglas was a worthy representative, and Mr. Charles Turner also contributed greatly to the success of the day.

We will now give a narration of the prizes in the order of the schedule. In Class A, twelve plants, dissimilar, the prizes were £4, £3, £2, and £1, for which five collections were staged. Rev. F. D. Horner, Kirkby Malzeard, Ripon, had the most of honour with a grand collection, comprising Traill's Anna, Traill's Prince of Greens, Turner's Charles Perry, Lancashire's Lancashire Hero, Egge's Champion, Smith's Ann Smith, Hesley's George Lightbody, Booth's Freedom, John Simonite, Chas. C. Brown, Smiling Beauty, and Figsro. Mr. B. Simonite, Rough Bank, Sheffield, was second with John Simonite, Talisman, William Bradshaw, Pizarro, Lovely Ann, Complete, Metropolitan, George Lightbody, Seedling (self), Frank Simonite, and Lancashire Hero—an admirable collection. Mr. Douglas, gardener to F. Whitburn, Esq., Loxford Hall, was placed third with Lancashire Hero, Smiling Beauty, Smith's Eliza, Robert Traill, John Waterston, Topsy, Admiral Napier, Charles Perry, Col. Champey's, Pizarro, Lady Sale, and Alderman Wisbey; and Mr. C. Turner, Slough, fourth with good examples of Bone-maker, Lord Elgin, Squire Chilman, Pandora, Charles Perry, Col. Champey's, Mrs. Storroek, Crucifix, General Neill, and Robert Lightbody.

Class B, six plants. In this class six prizes were provided, and there were five competitors, Rev. F. D. Horner being again placed first with Traill's Anna, George Lightbody, Pizarro, Lancashire Hero, Prince of Greens, and Smiling Beauty. Mr. Douglas was second with Lancashire Hero, Col. Champey's, Admiral Napier, Charles Perry, Col. Taylor, and Traill's Beauty. Mr. Ben. Simonite was third with Lancashire Hero, Traill's Beauty, Lovely Ann, Simonite's Fanny Crossland, Sims' Eliza Simonite, and Campbell's Lord Palmerston; Mr. Charles Turner being fourth with George Lightbody, Highland Queen, Charles Perry, Admiral Napier, Mrs. Storroek, and Col. Champey's.

Class C, four plants and four competitors, the Rev. F. D. Horner was placed first with Hesp's Smiling Beauty, Hesley's George Lightbody, Prince of Greens, ten fine pips; and Figsro. Second Mr. Turner, with Admiral Wisbey with three grand pips; Mrs. Mrs. Storroek, Turner's Col. Champey's, and Charles Perry, splendid. Mr. Douglas, Loxford, was third with Smiling Beauty, Smith's Eliza, Seedling No. 34 (grey), a fine flower but not flat; and Col. Champey's. Fourth Mr. Jones, Currow House Gardens, with Traill's General Neill, large, but a trifle coarse; Helen (grey), Mrs. Smith (self), and Miss Willoughby.

Class D, two plants, six competitors. Rev. F. D. Horner was first again with George Lightbody, eight fine pips; and Charles Brown, nine pips. Second Mr. Douglas with Charles Perry and Gains's Lady Richardson. Third Mr. Ben. Simonite with Mr. Charles Brown and Simonite's Samuel Barlow. Fourth Mr. Margetts, Lydington, Uppingham, with Traill's Napoleon and Beauty, very large; and fifth Mr. Turner with Charles Perry and Col. Champey's. Four classes were arranged for single specimens—namely, green-edged, grey-edged, white-edged, and selfs, and in each class eight prizes were provided.

In Class E, green-edged, the invincible Mr. Horner had the

first four prizes with Page's Champion, Prince of Greens, Col. Taylor, and Lancashire Hero respectively. Mr. Douglas was fifth with Lord Palmerston, Mr. Horner sixth with George Jeans, Mr. Douglas seventh with Lovely Ann, also eighth with a seedling with violet body colour and good paste.

Class F, grey-edged. First Mr. Horner with Geo. Lightbody, second Mr. Douglas with Robert Traill, third Mr. Horner with Chas. Brown; the remaining prizes—fourth Alma, fifth, sixth, and seventh Lancashire Hero, and eighth Alexander Meiklejohn, all going to the same great northern grower.

Class G, white-edged. Mr. Horner won the first four prizes with Heap's Smiling Beauty, Summerscale's Catherina (two prizes), and Taylor's Glory. Mr. Douglas was fifth with Ann Smith, and Mr. Turner sixth with Arabella.

Class H, selfs. First Mr. Horner with Pizarro, splendid; second Mr. Douglas with Pohlman's Ellen Lancaster, fine; third Mr. Horner with Duke of Argyll; fourth Mr. Horner with Blue Bell, highly effective; fifth to the same exhibitor with Metropole, and sixth Mr. Simonite for a rosy crimson seedling; seventh Mr. Turner with Mrs. Sturrock, and eighth Mr. Horner with Lord Lorne.

We now come to the last and greatest class—namely, Class I, fifty plants in no less than twenty varieties. Three prizes, viz. £5, £3, and £2 were provided, and the winners of them were Mr. Turner, Slough; Mr. Douglas, Loxford; and S. Cooper, Esq., The Hollies, Timperley, Cheshire, in the order named. In this class Mr. Turner staged Confidence, Charles Perry, Colonel Champany, Topsy, General Neill, Metropolitan, Mrs. Carter, Sir R. Peel, Mrs. Llewellyn, Mrs. Purvis, Mrs. Thomson, Clipper, Promethus, Garnet, Percival, Sarah, Duke of Cambridge, Mrs. Sturrock, James Douglas, a fine green-edged flower; Lavinia, Ne Plus Ultra, Prince Alfred, Arabella, Minstrel, Apollo, Alderman Wisbey, Mota, Wildfire, John Waterston, Sensation, Calypso, Eclipse, Superb, Lady Richardson, and Dolly Varden. Mr. Douglas ran the first-price collection very close with Smiling Beauty, Beatrice, Master Hole, Bronze Queen, Lord Palmerston, Marie, General Neill, Masterpiece, Lord Lorne, Mercury, Col. Champany, True Briton, Meteor, Miss Reid, Topsy, Mary Ann, Valera, Robert Traill, Forns, Elcho, Lady Sophia Dumaresque, Brilliant, Miss Arkeley, Robt. Traill, Charles J. Perry, Alma, Marquis of Lorne, Unique, Elcho, John Waterston, Perfection, Rev. George Jeans, Topsy, and Augustina. In Mr. Cooper's collection the most noticeable were Metropolitan, Pizarro, Lord Clyde, Gen. Neill, Traill's Anna, Lord of Lorne, Diadem, very fine flower (Alpine), Mrs. Smith, Atlas, and Taylor's Glory.

In the above classes one truss only was permissible on each plant, but in the three Alpine classes following any number of trusses were allowable, and the exhibitor had the option of staging shaded or unshaded flowers.

Class K, twelve Alpines dissimilar. Only two collections were staged in this class, and they were nearly of equal excellence. Mr. Turner was placed first with Thetis, Queen Victoria, Nat Norman, John Ball, Rover, Mrs. Dowdell, Dolly Varden, Salina, Prima Donna, Queen Eleanor, Veauvill, and Fascination, all his own raising. Mr. Douglas was second with Spangle, Beatrice, Masterpiece, Elcho, Miss Reid, Edgar, Bronze Queen, King of Crimsons, Mercury, Brilliant, and a seedling—a splendid dark maroon; this and Beatrice were the best of the varieties.

Class L, six Alpines; three competitors. First Mr. Turner with Topaz, Mrs. Llewellyn, Queen Victoria, Dolly Varden, John Ball, and Bronze Queen. Second L. Cooper, Esq., with Neatness, Ovid, Brilliant, Diadem, Beatrice, and Dazzle. Third Mr. Douglas with some of the same varieties as exhibited in the preceding class.

Class M, single specimen Alpines. First Mr. Douglas with a splendid seedling, fine in size and form, and rich in colour (afterwards named Sylvia). Second Mr. Turner with King of the Belgians. Mr. Turner had also the first, fourth, and fifth prizes for Distinction, Beesy Ray, and Nat Norman; the sixth prize going to S. Cooper, Esq., with Diadem.

The following new varieties were exhibited and certificated—namely, a first-class certificate was awarded to Mr. Ben Simonite for Frank Simonite, white edge, a magnificent flower of fine habit, leaves serrated, slightly mealed, truss supported on a stout elastic flower stalk, the eye rather pale, as it is in all plum or violet ground flowers. The ground colour is deep violet, paste dense, nearly circular, edge pure white. A similar award was bestowed on Talieman (Simonite), a beautiful green edge, the green very pure, body colour black and well defined, paste dense, tube clear yellow, a very correct flower and quite distinct; also for Fanny Crossland (Simonite), a very pretty pure white edge, the pipe quite flat, eye pale, violet ground colour, foliage serrated and slightly mealed, evidently from the same seed pod as Frank Simonite, though it is quite distinct from that fine sort. Ellen Lancaster was also exhibited. It is a splendid dark self, raised by Mr. Pohlman of Halifax, and sent out last year. It has certainly the finest dark edge of any Auricula, but the paste is scarcely large enough. It is, nevertheless, taking all points into consideration, the best in its

class. A first-class certificate was given to Mr. Horner for John Simonite (Walker), considered by the exhibitor to be the best in its class, and as shown by him it is certainly not second to Smiling Beauty or any other white. The tube is bright yellow, paste dense and pure white, body colour black, and edge a good white, although one or two pips showed grey. A similar award was made to Mr. Douglas for Silvia, grand Alpina, flowers large, perfectly circular, maroon yellow centre, and neat truss; plant has a neat habit—the best Alpina in the exhibition; also for William Bradshaw (Simonite), a very good grey, quite distinct, the paste dense, eye bright yellow, body colour deep maroon, but scarcely broad enough, as shown edge between George Lightbody and Robert Traill.

The edged Auriculas shown by Mr. R. Dean of Ealing are quite a new feature in the Auricula, and are very attractive. Three varieties received first-class certificates—viz., Attraction, dark purple, edge light purple, but in all these flowers the eye and body colour is the same; Charmer, maroon purple, pale purple edge; Captivation, quite a new shade in Auriculas, body colour maroon edged with ochre yellow. Mr. Turner had similar honours for the following Alpines—John Ball, a first-class dark self-edged sort; Mrs. Thomson, self-edged, very circular; Distinction, a peculiar shaded edge; Peacemaker, a good grey-edged flower; and Clipper, a good dark self, superior to Smith's Mrs. Smith.

One more honour in Auriculas remains to be noticed—namely, the premier Auricula in the Show. This exalted position was won by George Lightbody as exhibited by Mr. Horner. The truss contained eight pips quite perfect, and the plant, as may be expected, was quite a model—a plant which will haunt the memory of many a florist and admirer.

Mr. Douglas staged an extra collection numbering one hundred plants. Mr. Turner also staged numerous fine Alpines, twenty-two plants of Col. Champany and Yellow Prince, semi-double. The Auriculas were staged in nearly all the classes, and stakes were clearly necessary for the support of most of the trusses. The stakes were not, however, in all cases neatly affixed, nor was the wadding removed from some of the plants. It is only right to remark that Mr. Douglas's plants were staked the most neatly of all and named the most legibly.

POLYANTHUSES.—Three classes and twelve prizes were provided for these beautiful spring flowers, and the competitors were not restricted to gold-laced varieties. As a rule these were coarse, and there is undoubtedly abundant room for improvement; in fact, to speak the truth, many plants were quite unworthy of being exhibited.

In Class N (six plants, dissimilar) the first prize was awarded to Mr. G. Smith, New Villa, Edge Lane, Edmonton, for small plants roughly staged of Lothair, Rupert, Retriever, Garland, and Flora. The second prize was awarded to Mr. R. Dean, Ealing, for much superior plants of the following effective but not laced varieties:—Mars, Sunrise, Harlequin, Purity, Margins, and Viceroys. The third prize went to Mr. Catley, Bath; and fourth to Mr. Hooper, Bath, for clumps potted from the borders.

Class O, two plants dissimilar, Mr. Smith was placed first with Advancer and Emma; second Mr. Dean for The Bride and Prince Charming; third Mr. Catley, and fourth Mr. Hooper for unnamed fancy varieties.

Class P, single plants, Mr. Smith was placed first with Duke of Wellington (new laced), and Mr. Dean second and third with Butternut, a vigorous-growing primrose-coloured variety, and Avalanche (nose-in-hose), Mr. Catley being fourth with a creamy white seedling. Mr. Dean also exhibited double Auriculas, Primroses, and Daisies, some choice species of Primulas, and Viola montana.

Mr. Henry Hooper, Bath, exhibited thirty-six varieties of Fanny Panies, the flowers being large, but the roots not sufficiently defined; also show Primulas excellent, and a few brilliant coloured self varieties. Messrs. Harrison & Son, Leicester, exhibited Mimulus moschatus Harrisonii, the new giant Muek, very distinct and fine.

Certificates were awarded to the following Polyanthuses—to Mr. Smith for Duke of Wellington and to Mr. Dean for Avalanche, a robust free-flowering variety, likely to be useful, and for Purity, white.

Two more miscellaneous collections remain to be noticed—a fine bank of Roses in pots, Azaleas, &c., from Mr. Turner, Slough; and an admirably arranged table of Succulents staged by Mr. Thompson, the garden superintendent of the Crystal Palace. Amongst the Roses Royal Standard, Miss Hassard, Madams Ferdinand Jamin, Madame Lacharme, Rev. J. B. M. Camm, John Stuart Mill, and Beauty of Waltham were in superior condition, denoting that these varieties are admirable for growing in pots and slightly forcing. Mr. Turner's plants were much admired by the crowd of visitors, and well did they deserve this approval. The Succulent plants were appropriately disposed on the raised table of the series containing the Auriculas, and relieved the almost overpowering beauty of the brilliant Alpines. Down the centre of the Succulent table

Alces, &c., were dotted, the groundwork being composed of Lycopods arranged so as to form a series of diamonds. In these and the angles Pachyphytons and other curious plants were crumpled, the entire table being edged with Sempervivum tabulariforme—a fine stock in which the parent plant of the whole was prominently placed—a little stunted object about 2 inches in diameter and bent with age. Near it was a youthful child quite 9 inches across.

Such was the Show—a Show to which visitors came, as Mr. Douglas said, from the north and from the south, from Ireland and from Wales. It was refreshing to observe the intensity of the interest that was manifested in the Auriculae, not by florists only, but by the general visitors, and we doubt not that many a spark of love was lighted on behalf of these peerless town and country flowers. It is almost certain that in time—it must necessarily be a question of time—that new exhibitors will arise, for it is not conceivable that an exhibition such as this can pass away without attracting recruits to the ranks of the little—too little—army of Auricula-growers.

THE LUNCHEON.—This was partaken of, after the judging was completed, by the executives of the Show, Judges, exhibitors, and friends. In the absence of the President of this branch of the National Auricula Society (Francis Whitburn, Esq.) the chair was occupied by the Vice-President, Mr. Charles Turner; Vice-Chairman, Mr. Moore. After the toast of loyalty the Chairman proposed success to floriculture, and especially to the Auricula Society. Mr. Horner responded. The northerners, he remarked, like short sturdy Auriculas and short pithy speeches; that they in the north were anxious to unite with growers in the south; and that the secret of success in cultivating the Auricula might be expressed in two words—loving care. "The Judges" were responded to by the Rev. F. Tymons. "The exhibitors," proposed by Mr. Llewellyn, were acknowledged by Mr. Ben. Simonds and Mr. Douglas, Loxford. "The Press," proposed by Rev. F. Tymons, was replied to by Mr. Shirley Hibberd in an excellent speech. The "Executive" was proposed by Mr. Horner, and acknowledged by Mr. Dowdell, who concluded by honouring Mr. Wilson and Mr. Thompson, the Palace Managers of the Show, for their efficient services. The whole of the speakers were much applauded, and a successful Show was pleasantly terminated.

NOTES AND GLEANINGS.

We learn that the Exhibition which is to be held in the Royal Horticultural Society's Gardens at South Kensington on the occasion of HER MAJESTY THE QUEEN'S VISIT on May 2nd is expected to be one of unusual extent, variety, and excellence. Not only are the principal nurserymen intending to exhibit in their best manner, but several private collections will be staged. Commercial horticulture is also to be represented, for many of the growers of plants for Covent Garden Market, also bouquetists and others, are intending to exhibit their productions on the same liberal scale as at the last exhibition; so that altogether a right royal display is anticipated.

— At a General Meeting of the ROYAL HORTICULTURAL SOCIETY, held on the 18th inst., the following candidates were duly elected Fellows of the Society:—Thos. Ainsworth, A. J. Baker, Fredk. Bramwell, Edward Brooke, James Conner, E. W. Cox, T. A. Dickson, Mrs. M. Goldingham, H. L. Hardy, John Hayes, Mrs. Kennedy, Mrs. Alfred Kirby, J. T. McCallum, C. McLean Hinkley, Joseph Pyke, W. Richards, Talford Salter, Q.C.; Jas. Tinker, Philip Wright. A list of fifty-one guinea members elected by the Council was also announced. At the previous meeting, held on April 4th, twenty-five Fellows and eighty-five guinea members were elected.

— Mrs. CHARLES WOOLLTON, Elstree, Surrey, informs us that her gardener, Mr. Edward Tidey, has succeeded in making a valuable cross between LONG GUN and TELEGRAPH CUCUMBERS. The result is highly satisfactory. In a small house about 12 feet square this Cucumber is growing. The first Cucumber was cut the last week in March; since then thirty more have been cut, and there are forty-eight now hanging on the vine nearly ready for cutting. At one joint six Cucumbers are hanging, and most of the joints have five. The fruit averages from 18 to 20 inches in length, and is most delicious in flavour. We think the same cross was effected by Mr. Booth at Osmaston, from which resulted that fine Cucumber Osmaston Manor.

ALTHOUGH in February accounts reached us from various districts of the danger of fruit blossoms owing to their then advanced state, yet the protracted period of cold weather since then has so retarded them that they are later than usual in expanding, and the fruit crop of the year is hopeful. Pears, Plums, and Cherries have never been more covered with blossom than at the present time, and Apple trees generally

are showing sufficient for full crops. Apricots and Peaches, we hear, have not set well in many places owing to the cold winds having prevented the blossoms from expanding so well as was desirable.

— Mr. RICHARD MARIES, nurseryman, Lytham, has sent us a photograph of a plant of CYCLAMEN PERSICUM. The plant, which is in a 7-inch pot, has more than a hundred flowers, and is similar to the plants usually exhibited at the London shows. The plant has never been allowed to become too dry when at rest. Mr. Maries considers overdriving the cause of much injury in Cyclamen culture. The variety submitted is pure white, and evidently belongs to a good strain.

— A VALUABLE PINK FOR FORCING is the white variety Lady Blanche. We recently noticed some plants of this in the greenhouse at Loxford Hall in admirable condition. The plants were in 5-inch pots, each plant having more than a dozen flowers as fine and as sturdy as if the plants had been grown in the open air. The flowers are pure white, smooth and perfect, and Mr. Douglas informs us that they never split. This Pink is much prized at Loxford, and it is worthy of being similarly grown in many more gardens than we now find it.

— WRITING to us on INSECTS and AMMONIA, "E. G." states that plants growing in an atmosphere impregnated with ammonia will soon prove the efficacy of its invigorating influences, but he is of opinion that when Pines are free from red spider the immunity arises from cleanliness in winter as well as during summer, and a course of general good management which prevents the insects being established. Our correspondent doubts if ammonia will destroy red spider, and he is certain that it will not kill mealy bug, for he dissolved half a pound of guano in a quart of water, heated it, and then held some mealy bugs over the steam until he was tired; when the liquid was a little cooled he threw the insects into it, taking them out six hours afterwards, "when they seemed in good health and walked away in search of green pasture."

— PROBABLY no plants are more attractive at this period of the year than TEA-SCENTED ROSES. Amongst a large collection now flowering in Mr. Merryweather's nurseries at Southwell the following varieties are particularly beautiful:—Aline Sieley, Catherine Mermet, Climbing Devoniensis, Devoniensis, Gloire de Dijon, La Bonle d'Or, Madame Bravy, Madame Willermoz, Letty Coles, Louise de Savoie, Marie Van Houtte (very beautiful), Marie Guillot, Niphets, President, Souvenir d'Elise, Souvenir d'un Ami, Souvenir de Paul Neron, and Maréchal Niel. The new Hybrid Perpetuals Comtesse de Sereny and Duchess de Vallombrosa are proving valuable for forcing.

— We inadvertently omitted in our report of the Royal Horticultural Society's Show last week that a gold medal was awarded to Messrs. Beckwith & Son, The Nurseries, Tooting, for their grand collection of early-flowering Pelargoniums. The new variety which was submitted by Messrs. Beckwith to the Floral Committee, who awarded it a first-class certificate, was Duchess of Bedford, white with pink blotch and exceedingly floriferous; it is a great acquisition for decorative purposes early in the season.

— We quite agree with a correspondent who writes—"I have an idea that there are numbers of valuable APPLES which remain hidden in their respective localities and are not known to the general public—Greasy Coat, for instance, has only just raised its head again. I write in the hope that others may be persuaded to send lists of the most suitable kinds in their own neighbourhood." We join in the hope.

— The most favourite of FLOWERS for BUTTON-HOLES are Tea-scented Roses, and one of the best of them for this purpose is Isabella Sprunt. We observed some charming buds of this the other day in the gardens at Wimbledon House, and we were informed by Mr. Ollerhead that it is regarded as the best of all Roses for button-hole bouquets. The flowers are small and perfectly formed, the colours merging from white to creamy buff. As grown in pots at Wimbledon this Rose blooms profusely. Another favourite variety in the Rose house at Wimbledon is Madame Trifle. It is trained up one of the rafters. It has the free-growing and flowering properties of Gloire de Dijon, and is considered an improvement on that good old Rose—no small recommendation.

— A FINE old trunk of CYCAS REVOLUTA in the stove of S. Ralli, Esq., Cleveland House, Clapham Park, is now throwing a crown of fifty-eight new fronds. The plant has been in a quiescent state for nearly two years, and was a comparatively

mightly object amongst the other fine specimens surrounding it. Less patient gardeners than Mr. Legg would have removed this plant long since for the sake of the space it occupied; but his "waiting policy" has proved sound, and one more good exhibition plant will shortly be added to Mr. Ralli's valuable collection.

WHEELBARROW.

WHEN I came here about twelve years ago there was a skeleton barrow and tub in use for carrying water about the gardens, and another with a shallow box or tray about 6 inches deep for carrying plants, &c. They were both useful, and had been the means of saving much labour.

But very soon a modern iron waterbarrow was found to far surpass the former, but the latter was kept in use during several years for the boy to wheel the bedding plants to their destination, and thus save the time of two men with the handbarrow. But it was found impossible to keep small pots upright, owing to the jolting of the wheel. At length it occurred to me to devise a plan by which the tray might be made to

wheelbarrow. I have a man here who is slow in adopting new contrivances, but he has appreciated this barrow from the first.—UTILITAS.

CUCUMBER CULTURE IN FRAMES AND HOUSES.—No. 2.

I AM especially desirous of calling attention to the summer culture of Cucumbers in pots as a method which may be practised with perfect success by everyone who has a glass house, however small may be its size or whatever may be its form, a glazed passage or corridor answering perfectly well. I have now in view many of those residences around and in large towns, where space is so important that the laudable efforts to introduce a touch of nature are frequently confined to an enclosure of some few square perches in area, or even to that cleverly contrived little glazed adjunct known under the title of "the Conservatory."

All things considered, the best time to commence Cucumber culture in an unheated structure would be at any convenient moment from the beginning of May till midsummer, taking

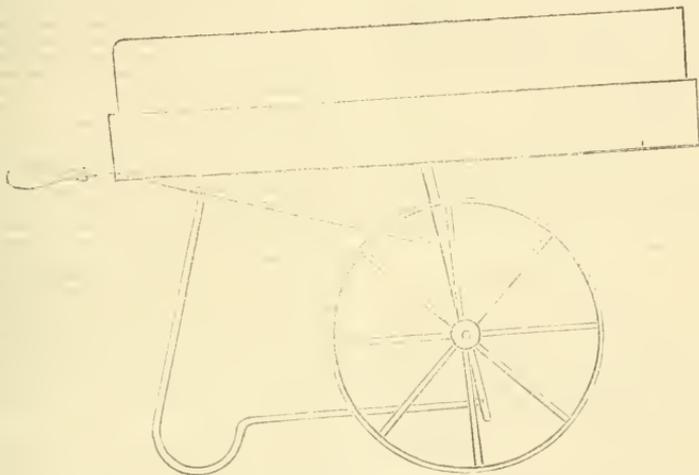


Fig. 89.

ride better on the frame of the waterbarrow, and the result was a most useful barrow, very similar to those used by the coster-mongers in the streets of London.

It is very simple in its construction, and I have no doubt that many who have a waterbarrow will be glad to find a second use for the wheels. Mine was made as an experiment, and having some split oak palings about 3 feet long I used three on each side for springs, and they have answered my purpose pretty well and have been in frequent use for five or six years. Steel would of course be better.

A round staff, about the size of a spade handle, is laid across in the hollow of the barrow, projecting over the wheels about 5 or 6 inches, and fastened by screws at the middle, or nearly so, of each spring. One end of each spring is firmly fastened to a stout cross piece under the front of the tray, and an oblong hole or slot is then made in the other end of each spring, and a small screw bolt put through it and driven into another slot cross piece under the other end of the tray to hold the spring in its place and yet allow it to work. The tray is held down to the handles by an iron hook. It can be tipped out of its place and the water-holder taken on in less than a minute. When placed against a wall it occupies very little space, and is ready for use at any moment. The upper edge of a 6-inch board is fixed round the lower edge of the tray, which hides the spring and makes it look more agreeable to the eye.

It is very useful for many purposes, and moves very light and easy, and the broad shallow and level surface makes it convenient for carrying plants, empty pots, and various things, and for these purposes it is far more handy than is a common

care to secure healthy plants with strong sturdy growth, turning them out from the small pots in which they will most likely be growing into the largest pots we can obtain, remembering that the larger the pot the longer will the plant flourish therein without extraneous assistance. We place four or five uneven layers of broken tiles or flower pots into the bottom of each large pot for drainage, and for soil take two parts of old leaf soil or manure mixed with one part of turf broken in pieces of about half the size of one's hand; failing the turf we would employ some ordinary garden soil and mix a lot, say half a gallon, of broken charcoal with it. With this, ample drainage, and free open soil, we can venture to water freely, which is an important point in the culture of Cucumbers.

Having thus established our plants in their permanent quarters, we have next to consider how to dispose of the growth. In a pit or regular Cucumber house there would be a wire trellis, but in the solitary structure of the amateur, which I am striving to keep in view, such a trellis is either inadmissible or is wisely devoted to ornamental climbing plants; and in such a case it is better to resolve not to allow the Cucumber growth to ramble unchecked, but to confine it within reasonable limits, such as is afforded by a pillar supporting the roof, or two or three wires fastened to the pot and strained upwards for a couple of yards in any corner or side which can be spared for the purpose; then by nipping off the tip of the leading shoot we can secure two or three lateral shoots, taking one up each wire, nipping off their tips when they show fruit, and so on with other laterals till the top of the wire is reached, by which time the soil in the pot will be crowded with roots, and

we must come to a decision whether we shall soon discard our plant or keep it on in full bearing for some time longer. In the latter case new growth must be encouraged and a proportionate provision of fresh soil be made for the roots by packing the soil around the pot. I very much prefer doing this with sods of turf broken into large pieces and heaped loosely around and over the pot, putting a moderate quantity at first and adding fresh layers as the roots become visible. It is an interesting and instructive sight to watch the manner in which the roots seize upon the sods, lacing them together till the whole mass is permeated with roots—a solid mass, and yet so open that no water can lodge in it. A healthy Cucumber plant when in full vigour requires an abundant supply of food in a liquid form, and if the soil is at all close or heavy in texture, it is by the frequent waterings rendered so sodden and sour as to destroy the roots, and so lead to partial if not total failure. If water was given as to an ordinary pot plant this would not happen, but when the Cucumber is in full bearing there must be no stint. Three times a day—morning, noon, and night—is not too often in hot bright weather; and for a guide as to quantity, two gallons each time, or six gallons a-day, will not be too much, sewage water or liquid manure of any sort being then used instead of clean water. There are so many fertilising agents now sold in canisters, that dwellers in a town have simply to procure a supply of some approved sort, such as guano, which is sold in small canisters, and they can mix it in the water, and so feed the plant without having to endure those unpleasant odours which are unavoidable when sewage water is used.

A mound of soil such as I advise to be made outside the Cucumber pot is not a desirable sight in a conservatory. Many plans for its concealment will readily present themselves to the mind, from a piece of zinc sheeting painted on the outside to an enclosure of ornamental tiles. Whatever is used, be sure and let it be large enough to admit of ample supplies of soil being given to the roots, for liberal treatment is the alpha and omega of Cucumber culture.—EDWARD LUCKEYBUST.

NOTES FROM MY GARDEN IN 1876.—No. 5.

AURICULAS.

I FLATTER myself it argues something of an heroic temper to sit in sight of a ruined collection of Auriculas and on the eve of the great Auricula tournament, in which I am not to have even one tilt, and write about what they were in the past year; but as I once heard a quick-witted friend say to a horse-dealer who was looking at a steed my friend was riding, and with the knowing wink peculiar to his tribe, said, "That's one of the best heens, sir." "Well," said my friend, "that's better than one of the never wases." So say I. Although I cannot but grieve over the terrible loss that I have experienced, it is a melancholy satisfaction to me to think that for the many years I have grown Auriculas I never had so grand a bloom as in 1876. Ah! how many years! Well, upwards of forty years ago I began to grow them, and from that time to this with but a brief interruption I have continued true to them.

I was brought up in the very strictest school of florists, for I think at that time there were none so particular and so exigent in their tastes as the Dublin florists. They had imbibed a great many of their views from the Lancashire growers, but had somewhat modified them—in so far, for instance, in the Auricula they did not exhibit trusses cut down to three pipe, nor did they carry their Auriculas to the exhibitions wrapped in moss; but they were exact as to the purity of edge, repudiated all coarseness of texture and foliage, and never exhibited their flowers staked. I have seen a good many collections of Auriculas in my days, but I do not think that it is the recollection of youthful days which makes me say that I never saw such plants and blooms as those grown by Dr. Plant at Monkstown. I have often alluded to them in various publications; and although he and they are passed away, the thought of the Glories, Freedoms, Colonels, &c., that I then saw still cling to me. From all that I hear the valuable collection of the Rev. F. D. Horner must be the nearest approach to it that we have. When in 1849 I came back to my native country I found that a good deal of the enthusiasm I had often witnessed about London for the flower had died away, and for the past thirty years nearly it has by fitful starts alone been brought before the public; but during that time a good many very fine flowers had been added to the lists, principally through the exertions of Mr. Heady of Cambridge and Mr. Lightbody of Falkirk, while in the metropolitan district one or two re-

markable flowers had made their appearance. Chapman's Maria is probably one of the most lovely flowers we have; and it was, led away by its charms, that I once proposed (although I retreated from the position very quickly) that Auriculas should be divided into the two classes of edged flowers and selfs. This brought down on me the good-natured banter of my friends Mr. Jeans and Mr. Bramhall; and I am sure they were right, although they so far conceded to my views that a nondescript class was suggested.

The Lancashire growers are unquestionably right in laying so much stress on the edge, but there are many flowers in which it is almost impossible to say whether they should be classed as greens or greys, while some white-edged have a decided tendency to grey on the edge. These are very attractive, but they do not show that purity of edge which they insist upon; and it is this that accounts for the fact that, notwithstanding the rare beauty of Maria and Sophia and the sterling properties of Col. Champey's, they do not find a place in one of the lists sent in to the Rev. F. D. Horner in his election of Auriculas. Amongst other flowers concerning which one's opinion has altered is Litton's Imperator. Faulty it is no doubt in several respects, but the purity of its green edges makes up for many defects, and it was very noticeable in my blooming house last season. There is another flower of Mr. Heady's very near being a first-rate one. I received it as Heady's Green Edge. It has a fine eye, in which many of the new sorts are defective, and the edge is very pure; but I doubt if it will ever make a good truss, although on the stage it shone out well owing to the brightness of its green.

I have still seen nothing in grey edges to surpass George Lightbody, for Alexander Meikiejohn, although a very fine flower, wants, as I saw it, a little more decision in its grey edge. My blooms of Richard Heady were remarkably fine, although somewhat late. Another curious thing has occurred with my Waterhouse's Conqueror of Europe. A large number of them came with split and twisted flowers, and as I have already noticed the same this year I must throw them away, for this has been the third year that they have served me so, and the flower still retains its hold on many growers, notwithstanding the newer varieties that have threatened to put it on one side.

Amongst white edges (a rare class) Taylor's Glory was represented by one solitary plant, which of course this new pest has attacked; but Smiling Beauty was good, although in size, and perhaps in whiteness of edge, inferior to True Briton, which is very large, but does not often open quite flat. Robert Burns was good; and the flower about which I was puzzled, and which I had received as Pott's Regulator, turned out to be MacDonald's Incomparable, and is by no means to be despised in a class like this, where good varieties are scarce. Smith's Ne Plus Ultra was also very good.

Amongst selfs Campbell's Pizarro, Spalding's Metropolitan, and Lightbody's Lord Clyde were very fine. I had also some good blooms of Dickson's Apollo, a fine blue variety not often met with now, although once very much grown about London. Kay's Topsy I have not as yet had.

So good was my bloom that, not wishing to have all the pleasure to myself, I invited through the local newspaper any of my neighbours to come and see them. A godly number availed themselves of the invitation, and to many (who only knew the Auricula from the border flowers) it was a revelation, the edges and mealy foliage being an especial puzzle to them; and now, alas! were I to invite them it would only be to spy out the poverty of the land. I have been worse off, once when the old man I left in charge of my small frame kept it close so that the flowers were scorched, and then told me that a grub must have got at them; but I was younger then, there was no National Show, and my collection was small. I shall not of course cave in, I have still some left; but the provoking thing is, one cannot guard against this new pest, about which I confess I am as yet altogether at sea. Perhaps after the Show I may be more enlightened about it; all I know now is it has ruined me for this year.—D., Deal.

TOMTITS THE FRIENDS OF GARDENERS.

I HAVE just read a letter on page 290 in your Journal signed "A MASTER GARDENER," and must beg to dispute what he says as regards the tomit being a gardener's enemy. I have had a pair of these birds for several years in a cage very tame, and have tried them with small branches from the various fruit trees in the garden. They at once searched them very keenly,

and devoured greedily any insect that might be upon them, but never ate the green bud. It was amusing to see how quickly they would clear a branch covered with green fly. A large bluebottle fly was a great treat to them, and they are also fond of wasps and bees. Though very fond of my bullfinch I cannot give him such a good character. He devours every bud he can get and thinks them delicious.—M. HAMILTON.

[The tomtit is a soft-billed bird. Only hard-billed birds destroy buds.—Eds.]

CINERARIA CULTURE.

At the fortnightly meeting of the Darlington Gardeners' Institute held on April 12th, the following paper on the cultivation of the Cineraria was read by Mr. Grindrod of Woodburn:—

Cinerarias are undoubtedly amongst the best plants we possess for producing an attractive display during the late winter and early spring months. That they are universal favourites all will admit; for while the beauty of their flowers secures for them ready admittance to the home of the florist, the simplicity of their culture, their usefulness as decorative plants for the greenhouse or conservatory, and also for furnishing a supply of cut flowers, for which their pleasing fragrance renders them especially adaptable, cause them to be almost indispensable to amateurs and gardeners. The original varieties of Cinerarias have been much improved by careful cultivation and skilful hybridising, the result of which has been better and more symmetrical flowers and a dwarfier habit in the plants; but the most noticeable result has been the production of double Cinerarias, which are now being distributed by a London firm, and only require to be known to be appreciated. Both the single and double varieties are propagated from seeds and offsets, and as the treatment of both varieties is almost the same it will be sufficient for our present purpose to consider them as identical.

To propagate from seed sow about the first or second week in May in seed pans filled with a compost of equal parts loam and leaf soil, with sufficient sand to render it porous. Scatter the seed evenly over the surface, and cover very lightly with soil made fine by crushing with the hands. After sowing place the pans in a shady position in an intermediate house and water carefully, keeping the soil in a moist condition. Do not attempt to hasten germination by placing glasses over the pans, for although by so doing the seedlings may make their appearance a few hours sooner, they will be weaker in condition to a corresponding extent. If from any cause you have reason to fear that the soil will become too dry, a little sphagnum moss placed on the surface will assist to keep it in the requisite moist condition; but only in the exceptional circumstance above mentioned do I advise keeping the surface covered. As soon as the plants have made their rough leaves prick them off into pans or 8-inch pots, using a light loam with plenty of leaf soil. After pricking-off return them to the intermediate house, and give a good watering. Here they may stay until they commence growing freely, when they should be potted into 3-inch pots and placed in a cool frame. Use a light open soil for potting, as before advised. Give a good watering after they are potted, and keep shaded until they are established, after which they should have plenty of air and as much light as they will bear without injury. Syringe lightly morning and evening in fine weather, and keep them clean.

As the plants increase in size and fill their pots with roots give them another shift into 5-inch pots, using the soil a little rougher, and if convenient adding a little decayed manure. After potting, place them in a cool frame in a shaded position on a bed of ashes, which, in addition to keeping worms out of the pots, furnishes a moist heel by bottom on which Cinerarias delight to stand. Water thoroughly and keep shaded until the roots begin to work freely in the new soil, when they may have abundance of air, but shaded from direct sunshine. Keep the foliage clean and free from insects by syringing copiously in hot weather, and never allow them to become too dry at the roots, or all the lower leaves will be lost and the growth of the plants seriously checked. After the roots have touched the sides of the pots occasional applications of manure water will greatly strengthen and improve the foliage, and also encourage the growth. If properly attended to they will now be growing very quickly, and will soon require moving into larger pots, which must be done before the roots become matted. Drain the pots carefully; for although Cinerarias require plenty of moisture during their growing season, they cannot bear stagnant water at their roots. In potting, use a

mixture of two parts turfy loam broken in small pieces by the hand, one part leaf soil, one part sand and manure. Pot moderately firm and replace in the frames, water thoroughly, and keep close as before. Watering must now be carefully attended to; if they become too dry at the roots they will very likely be spoiled as decorative plants. If the weather is very hot during July and August the plants will be much benefited by having the lights removed at night and allowing them to have the night air and dew, of which they are very fond. Continue to use the syringe freely every day, give plenty of air, and you will have little trouble with green fly. As the season advances and October draws near gradually disperse with shading until the foliage becomes strong enough to bear the direct rays of the sun without injury, which will be in October.

As soon as there is any indication of frost remove the plants to their winter quarters as near the glass as possible. If they can be accommodated with a shelf in a greenhouse from which the frost is excluded they will pass through the winter in good condition. Give the largest plants another shift into 9-inch pots before they show their bloom. Pot in a coarse mixture of two parts good turfy loam, one part leaf soil, and one part sand and manure; pot moderately firm, and replace on the shelf. Watering must now be carefully but regularly attended to; do not allow them to get either too dry or too wet, but keep the soil in a medium condition. As the pots fill with roots give manure water occasionally, gradually increasing the strength until they take it at every watering. If they can be syringed overhead on fine mornings it will assist to keep the foliage healthy and free from insects. After the blooms are expanded they will keep in perfection longer if they are shaded from the rays of the hot spring sun.

Propagation by offsets is generally done to preserve any exceptionally good seedlings and also named varieties, and especially the doubles. After the plants have flowered cut them to within 2 inches from the surface of the soil, and place in a close frame, when they will soon produce plenty of offsets, which must be removed with a sharp knife; pot them singly into 3-inch pots, using light sandy soil, and place in a frame where they can have the benefit of a little heat, and keep close and shaded until they are rooted, after which they are treated as if from seed. Cinerarias are very liable to the attacks of green fly, especially if grown in places where fire heat is used; keep a sharp look-out for it at all times, and destroy as soon as it makes its appearance by fumigating with tobacco paper. A word in closing as to watering, which must be done very carefully during the winter months: Increase the quantity as the days lengthen, when, if all goes well, you will have an abundance of what are always desired—namely, beautiful spring flowers.

GUMMING OF FRUIT TREES.

ANYTHING that Mr. J. Simpson of Wortley says is always treated by me with respect, and I am flattered by having such a well-known practical gardener as a critic; but I am afraid he has invited me to do what is not very easy—viz., to "furnish one authenticated instance in which gumming was beneficial rather than injurious to the Peach tree." Mr. Simpson surely would not make me say that a tree which gums badly is better than one which does not gum at all. My theory is, that a tree which has more sap than its organs of circulation can elaborate is benefited by being relieved of some of it, and this much I have proved to my own satisfaction, but convincing Mr. Simpson is another thing.

Mr. Simpson quotes from Thompson's "Gardeners' Assistant," a book I acknowledge to be the best standard work on practical gardening ever published. Moreover, I had the invaluable privilege of working with its dear old author, and accepted greedily every word he uttered in my hearing; but for all that I cannot say that he was always right. And to quote again part of Mr. Simpson's quotation, where Mr. Thompson says, "If it [gumming] pervades a tree to any considerable extent, the sooner the latter is dug up and replaced by a healthy subject the better." I ask, What would Mr. Thompson do were he in my position, when after following the above advice more or less for eight consecutive seasons under every possible variety of treatment, not with one or two new trees each season, but probably an average of twenty, and then he obliged to confess, as I am, that he never had a solitary Peach tree three years in one place out of dozens which did not gum? Would he dig them all up and give up Peach-growing

altogether? Not likely. He would try again, and so did I; and although I have not been able to prevent gumming, I have succeeded in checking the baneful effects produced by its bursting through the bark of its own accord. By a timely surgical operation I have cured many a wound, and for three successive years have had fruit of the best quality by thousands.

The trees are not long-lived here, and they probably never will be, owing, I fear, to circumstances over which I have no control.

I have had considerable experience in the neighbouring county to that in which Mr. Simpson resides, and found Peach-growing there a much easier matter than it is here; but let not Mr. Simpson make me say that Yorkshire is a better climate than Wiltshire. What I infer is, that some spots in the southern counties are no better than a few favoured ones in the north of England and some parts of Scotland.—WILLIAM TAYLOR.

IN FLORA'S DOMAIN.

Who would not if it were possible dwell for ever in a region so delightful, so full of beauty, so redolent of fragrance, as Flora's domain?—a kingdom where trouble seems never to enter, where peace and tranquillity should have an endless reign, where all the paths should be strewn with Roses, where we find flowers for every season, for all time; flowers greeting with smiles the advent of spring; flowers breathing out sweet essences at the kiss of the summer sun; flowers interwoven in the golden garlands of autumn, and braving the withering frowns of inclement winter. Every season, yea, every month, we may visit Flora's domain and find some sweet blossom to interest, some opening bud to observe in its gradual unfolding.

"In the cottage of the riest peasant,
In ancestral homes, whose crumbling towers,
Speaking of the past into the present,
Tell us of the ancient games of flowers.

"In all places, then, and in all seasons,
Flowers expand their light and soul-like wings,
Teaching us by most persuasive reasons
How akin they are to human things."

And the more we study them, the more we cherish them, the more endeared do they become to us. We regard their development with somewhat of the affection with which we watch the growth of a child; and as the love of a mother is often greatest for the crippled or sickly offspring whose life is a perpetual source of care and anxiety to her, so do we see the enthusiastic horticulturist tend with the most unremitting pains that plant which least repays his care.

In Flora's domain many of the sweetest blossoms are almost of spontaneous growth. Once started into life they thrive and bloom under the most adverse circumstances; but where the surroundings are propitious to their well-being they grow and blossom and form a very bower of beauty, wherein we may dwell and contemplate their charms—aye, and more than their charms, for in language as true as it is beautiful has not the poet told us how akin are flowers to "human things?"—

"Brilliant hopes, all woven in gorgeous tissues,
Flourishing gaily in the golden light;
Large desires with most uncertain issues;
Tender wishes blossoming at night.

"There in flowers and men are more than seeming;
Workings are they of the self-same powers
Which the poet, in no idle dreaming,
Seth in himself and in the flowers."

But Flora's domain is not alone a paradise for dreams and reveries. The Spartan and the idler may enjoy its beauties; but it requires the industry of the worker and the experience of practice to create a kingdom for the goddess in inauspicious places. Flora's favourite will revel on the mountain side, clothe the valley with loveliness, beautify unfrequented places, "and waste their sweetness on the desert air;" but they must be wooed to the haunts of men, caressed into beauty, and tended with love and care. It is only thus we can ensure their life, and it should be our aim to surround our homes with as many as possible of the captivating beauties, for their very presence adds a charm to the most sumptuous apartment or sheds a grace which half hides the nakedness of poverty-invaded homes. Flora's domain is wide, and it will be my pleasure to regard it from time to time as it lies before me in the outdoor garden, the conservatory, the greenhouse, in the window, on the balcony, where, even in the two latter limited areas, Flora may be induced to smile in return for kindly attentions lovingly bestowed. During weary winter weather, debarred in a great measure from the open garden, we must solace ourselves with those of Flora's train which blossom under glass. Nor need

our list be very limited. Science and art have combined, and while the sad-coloured winter sky of English towns hangs over our heads, within our dwellings we may be enjoying the contemplation of tropical magnificence, and inhaling perfumes that wait our thoughts to the gorgeous islands of southern seas. Into this land of enchantment, whether it be in the open ground in summer or beneath the shelter of a crystal roof during winter, my aim will be to note all that is worthy of remark in the glass palaces or extensive grounds of the wealthy cultivator, in the modest garden plot or window of the wayside cottage, or in those thousands of suburban homes where—throughout its taste is so often expressed in floral decorations.—T. S. J.

DODDINGTON HALL, NEAR LINCOLN.

DODDINGTON has a very remote history, but I shall confine my remarks chiefly to the present Hall, the building of which dates from the beginning of the sixteenth century. In 1600 the male line of the Burgh family became extinct by the death of Robert the last Lord Burgh, a child of six years, when the property was divided among his four sisters and co-heiresses. At that time their Gainsborough mansion and estate was sold to the Hickman family, the present representative of which is Sir Hickman Bacon, Bart., of Thonock Hall. The property at Doddington passed into the hands of Thomas Taylor; at all events he was its owner in March, 1604, when, as Thomas Taylor of Doddington, *alias* Doddington Pigott, he appears to have been a citizen of Lincoln, where he, or perhaps his father before him, who bore the same name, had made his fortune. The date of his acquisition of the property, the early part of the seventeenth century, fixes the date of the present Hall, of which he was the builder. "Tommy Taylor," as he was familiarly called, is the best remembered of any of the former possessors of Doddington, and stories are still told of his eccentricity and penuriousness. He is believed to have buried a treasure somewhere about the place, and no great digging works are carried on without many speculations as to the chance of coming upon "Tommy Taylor's chest;" while his oddity of dress is perpetuated in the local, or rather provincial proverb, "One large and one small, like Tommy Taylor's buttons." However, to use another local expression, "he must have had all his buttons on," or he could not have planned and built so fine a house, which has lasted in good preservation for nearly three hundred years, and without doubt is one of the oldest mansions in the county.

It may be that the treasure he is said to have buried at Doddington is a popular reference to the money he spent in the purchase of what must then have been a half-cultivated and comparatively worthless property, left for his successors to discover by the process of enclosing, ploughing-up, and draining the waste land. The only coin we have heard of that he may actually have dropped is a silver shilling of Queen Elizabeth, which was picked up a few years ago. Thomas Taylor was High Sheriff of Lincolnshire in 1620 and died unmarried, leaving as his heir his niece Elizabeth, daughter of his sister Jane Taylor. She by her marriage with Sir Edward Hussey, Bart., of Honington, brought Doddington into possession of that family. On the death of Mrs. Aprece, the heiress of the Hussey family, in 1749, the Honington estate descended to her son Thomas Aprece, in possession of whose descendants it continued until very late years. By her will, however, she settled Doddington on her daughter Rhoda Aprece, the wife of Francis Blake Deleval, Esq., and on their second and other sons in succession. It was thus that Doddington became the property of that great northern family who derived their name and descent through the Norman settlement in France from the petty kings of Dahl in Norway. Lord Deleval had an only son who long predeceased him, dying in 1775. After his son's death he cut down all the valuable trees at Doddington. At that time there were fine Oaks all over the lordship. Old James Hall, who died in 1858, aged 95, recollected cutting down seven very large Elms in front of the Hall; they were beautiful trees, and the wood quite sound and very red. In consequence of this felling the only old trees about the place are the three Spanish Chestnuts in the orchard and the great Holly, the stem being 11 feet in girth, which tree, tradition says, once saved a lady's life, she having jumped into it from the roof of the Hall as the only means of preserving her honour.

The late George Knollis Jarvis succeeded to the Doddington estates in 1851. He devoted himself to the diligent perform-

ance of his duties as an active magistrate and resident county gentleman and landlord. Mr. Jarvis took great interest in gardening, devoting much time to the cultivation of the Rhododendron. In a secluded spot in the plantations he would amuse himself for hours together, his great hobby being raising seedling Rhododendrons and attending to their wants. Mr. Jarvis died on the 25th of October, 1873, and was succeeded by his son George Eden Jarvis, late Captain in the eighteenth Hussars.

Doddington Hall is in a good state of preservation. The entrance is enclosed by a substantial brick wall about 8 feet high, which is at right angles with the mansion, and forms a square as nearly as possible upwards of half an acre in extent. In this enclosure are four large Cedars of Lebanon with wide-spreading branches, and upwards of 70 feet high. Noticeable in the front is a fine tree of *Magnolia tripetala* upwards of 60 feet high, which would have been much higher

but for the occasional pruning it has to undergo to keep it from towering above the mansion. On the west side of the mansion is the flower garden. Before the front is a slightly raised terrace, and a broad walk leading down the centre and a walk round the sides, leaving a border under the wall which is planted with herbaceous plants. The upper part of the flower garden is laid out in irregular-shaped beds with Box edgings of considerable height, the lower part being laid out on grass. No panel or carpet bedding is here attempted, but the planting is in bold masses of rich scarlet *Geraniums*, yellow *Calceolarias*, and other good old-fashioned flowers in keeping with the ancient style of the building.

Passing through a central gate we enter what is called the orchard, which is a mixture of fruit trees and ornamental trees and shrubs, such as *Wellingtonia gigantea*, about 30 feet high, of symmetrical shape; we noticed also a specimen of *Cryptomeria japonica* about 30 feet high and 18 feet through. Notice-



FIG. 49.—DODDINGTON HALL.

able are some fine Apple trees of Northern Greening and Blenheim Orange, which bear heavy crops of fine fruit. One hundred pecks were gathered from a tree of Northern Greening, and sixty pecks from a Blenheim Orange.

In our engraving may be seen the fine old Holly in the north-west angle of the mansion, and to the left the three old Spanish Chestnuts (30 feet in girth of stem) previously mentioned. To the extreme left beyond the Chestnuts is a fine old Holly hedge about 100 yards long, 12 feet high, and 6 feet through. This is clipped annually, and is square at the top. This hedge is a great feature. It is the boundary of the orchard and pleasure grounds, also masks the kitchen-garden walls immediately behind it, and is of great service in sheltering the kitchen garden from the north-westerly winds.

From this point we enter the kitchen garden, and at once come to the glass structures. These are two lean-to vineries, each 25 feet long by 16 feet wide, the Vines consisting of Black Hamburgh, Barbarossa, Muscat of Alexandria, and White Nice. The Vines have been planted upwards of thirty years, but are still in good bearing condition, and annually carry good crops of well-finished fruit, the Black Hamburgs being remarkably well coloured. Next in order is a span-roofed forcing house, 25 feet long by 12 feet wide, with a path down the centre. Here Cucumbers and Melons are grown. This house is heated with 4-inch pipes, top and bottom heat. In

Melons Little Heath's held in great esteem, and for Cucumbers Telegraph is grown for late use. Next comes the greenhouse, 20 feet by 16, well stocked with a mixed collection of healthy-looking plants, with the usual cold pits and frames. Last but not least is the orchard house, which is 60 feet long by 20 feet wide, and 12 feet high in the centre, with entrances at each end. There is a central border 6 feet wide, and side borders 3 feet 6 inches wide. The trees are grown in pots.

The centre of this house, and also the sides, are supported by light iron columns. By the side columns are planted *Maréchal Niel* Roses, which are trained horizontally on strong iron rods near to the glass. These plants yield annually a large supply of cut blooms during the spring months. To the centre columns are trained Vines under the top or ridge of the roof. The sorts grown are Black Hamburgh, Grizzly Frontignan, and Sweetwater, and although no fire heat is employed the Grapes ripen by the end of September; and what is worthy of remark is that the Grizzly Frontignans are always remarkably good, much better than are occasionally met with in highly-heated structures. This house is built on the Riverstonian principle. The ventilation is at each end over the doors, the front ventilators being opened by slides which open and shut the entire length.

The best sorts of Peaches, Nectarines, Apricots, Plums, &c., are grown in No. 1 pots, the trees being 6 feet high and 6 feet

through. These pots are annually top-dressed with good loam, well-decayed manure, and crushed bones, and are also well fed with liquid manure in the growing season. There is one great feature about this house—the trees have never been known to fall in producing from thirty to forty dozens of fruit annually. Noticeable in the same house are two plants of the Portugal Quince in large pots 6 feet high, which have produced fruit weighing more than 1 lb. each. These plants have a very ornamental appearance, and would make fine objects for standing on terraces in the summer months.

This house is not only useful and profitable as a fruit house, but every portion of soil in the borders under the trees is utilised by planting early Potatoes in the spring, also Mustard and Cress, Radishes, Lettuces, &c., and in the autumn the house is rendered gay with Chrysanthemums, which are struck in June in outside borders, and afterwards planted in the borders under the pot trees and pegged down, the large varieties being used. These at Christmas are exceedingly pretty, and furnish large supplies of cut blooms.

The kitchen garden is walled-in, is nearly two acres in extent, and is divided into quarters by fine espalier fruit trees, which annually carry good crops of fruit. The walls are by no means high, but the garden is well sheltered by outside shrubberies. The south border is about 10 feet wide, where early Peas, Potatoes, &c., are grown. About midway down this border stands a fine Cedar of Lebanon of spreading habit, which was thickly studded with cones. We were particularly struck with the Box edgings in the kitchen garden, which are a yard high and the same breadth through at the bottom. These are clipped annually in the shape of an inverted A.

These gardens have for several years been under the superintendence of Mr. F. Barrowcliffe, the able head gardener.—G. R. A.

PEAS IN A MILD WET WINTER.

A DOLEFUL tale have I to tell about the autumn-sown Peas. Sown on a favourable day in November they came up quickly, green as an emerald and abounding in health and vigour. The weather was extremely mild and wet, causing the Peas to grow so fast that soil had to be drawn up to support them. Well, the rain kept falling and the Peas kept growing, till at length they became so long and tender as to be unable to withstand the effects of so much wet, and gradually succumbed to it, the stems rotting just above the surface, and so the entire crop was lost.

While this gradual decay of a crop, which could not be replaced, was going on I happened to read a note upon the hardness of that excellent early Pea William I., and I went to have another look at my William I., but hardly a healthy plant could I see; they had perished and become victims to causes entirely beyond control. It may be said that by hardness a certain power of resisting or being unaffected by the effects of severe cold was meant; but I hardly think it could have been so, as the mild damp weather has been very general in the southern counties of England, precisely the district to which I understood the remark to apply.

Ringleader was sown in quantity on the same day in November and under similar conditions to William I., and it is worthy of note that the older variety withstood the effects of the damp long after King William succumbed; at length, however, it also decayed. Such a thing has never happened to me before, and from what I have seen in one or two other gardens I very much fear many of my brethren are in a similar predicament.

I am glad to add that the sowings made in January and onwards to the present time are in excellent condition, and are growing so freely that a supply of green Peas will probably be forthcoming very soon after the usual time, which here is about the last week in May.—EDWARD LUCKHURST.

EARLY AND LATE DISTRICTS.

MR. DOUGLAS has recently remarked—"Many specimens of Pear and Plum trees are now in full blossom," and as this indicates a somewhat earlier condition of blossoming than I can speak of here, it has suggested to me that the question as to what determines earliness might be an interesting one; to me it would be so at any rate. I find on going up to London from here (Ashford) that as one approaches the metropolis Pear and Plum trees seem more forward; but then one would require to know the condition of the soil—for this must have

much to do with it—and the varieties in bloom, for these differ as to their period of blooming. Let me, then, take a few of those which I have as standard trees, and ask some of your correspondents if they would kindly say in what condition their bloom is in when they receive the Journal this week (April 26th)—Williams' Bon Chrétien, Bauré de Caplanmont, Bishop's Thumb, Doyenné du Comice, Comte de Lamy, and Marie Louise. My own garden lies well sheltered (not walled-in) from the north and north-easterly winds. The soil is rich and open, and in most parts of good depth, and yet I have not (April 18th) one single expanded truss of bloom on any of the trees, and I am therefore curious to know if there are any other circumstances which determine this matter of earliness. Would our worthy superintendent at Chiswick kindly take the trouble of saying what is the condition of his trees of the sorts already named?—D., Deal.

HEDGEHOGS AND BULLFINCHES.

I LITTLE thought that I should ever in these enlightened educated days read in actual sober print, not put in as a joke or as an old superstition, "that hedgehogs will suck the cow and spoil her," and that "this fact is indisputable," but so in last week's Journal it is written by "A MASTER GARDENER." We are told also that the writer "has sought and gained this information from farmers of long standing." Very long standing indeed. I should fancy the farmers were upwards of a hundred years old.

I take down from my bookshelves the first work that comes on natural history. There I read, "Many absurd errors prevail as to the habits of this animal [the hedgehog]. It is charged with sucking the teats of cows by night, and wounding their udders with its spines, thereby causing those ulcerations which are sometimes observed. From this false accusation, however, the smallness of its mouth is a sufficient exculpation." Further I need not write. How strange that such nonsense should still be believed in. Clever fellow was that cowman who in very old days stole the milk and then blamed the hedgehog, and how readily other thieves took up the tale.

I next in positive duty must add a word about what "A MASTER GARDENER" says about the bullfinch, which is equally erroneous. He writes, "I find that on the best authority the bullfinch rarely frequents the garden, and then only when there is great scarcity of food outside the garden." Well, every year in January and February I have seen them in gardens for the last forty years, and this year I saw five on one Gooseberry bush picking out the buds. So has my squire's gardener. So have the farmers in their gardens. Wisely wrote J. Gadd, "The bullfinch is my game during the winter months." Then comes my friend Harrison Weir, who has not a word to say in defence of the bullfinch, and with his keen appreciation of bird-beauty. I open my "Journal of a Naturalist," second only in value to White's "Selborne," and I read, "The bullfinch has no claims to our regard. As spring approaches it will visit our gardens, an insidious plunderer. Its delight is in the embryo blossoms, wrapped up at this season in the bud of a tree, and it is very dainty and curious in its choice of this food, seldom feeding upon two kinds at the same time. It generally commences with the germs of our larger and most early Gooseberry, and the bright red breasts of four or five cock birds quietly feeding on the leafless buds are a very pretty sight, but the consequences are ruinous to the crop. When the Cherry buds begin to come forward they quit the Gooseberry and make tremendous havoc with these. I have an early Cherry," says this writer, "that has been for years a great favourite with the bullfinch family, and its celebrity seems to be communicated to each successive generation. It buds profusely, but is annually so stripped by these feathered rogues that its kind might almost be doubled. The Orleans and Green Gage Plums next form a treat, and draw their attention from what remains of the Cherry.

"The idea that has been occasionally entertained, that this bird selects only such buds as contain the embryo of an insect, to feed on it and thus free us from a latent colony of caterpillars, is certainly not correct. The mischief effected by bullfinches is greater than commonly imagined, and the ground beneath the bush or tree on which they have been feeding is commonly strewn with the shattered buds, the rejectments of their banquet, and we are thus deprived of a large portion of our best fruits by this assiduous pillager—this 'pick-a-bud,' as the gardeners call it, without any redeeming virtues to compensate our loss."

I hope after this quotation from so accurate an observer we shall have no one defending the bullfinch. Gardeners, imitate Mr. Gadd; make the bullfinch your game during winter. Chaffinches do little harm; they draw-up our young Radishes as soon as they appear above the surface, but this done they do no more mischief. Cover-up the beds and then enjoy the song and beauty of the chaffinch. The tomtit should not be destroyed; it is an insectivorous bird. Sparrows, too, are great consumers of insects, and by a wonderful arrangement of Nature, during spring and early summer they live on insects, and their constantly increasing families require an unceasing supply of food, hence they do much good. The summer over, they live on corn. In proper numbers sparrows are gardeners' friends.—WILTSHIRE RECTOR.

SURELY "A MASTER GARDENER" is joking when he writes as regards the hedgehog "that they suck cows, and further that they spoil them as well." He also writes, "this fact is indisputable." In the first place I deny it is a fact, and next I dispute it. Did he or any of the farmers he mentions ever see one so doing? It is not a new statement, but one that has never been proven, and although naturalists have made every inquiry there never has yet been one person that has said he had seen the animal in the act. If "A MASTER GARDENER" were to examine a hedgehog's mouth he would at once see how utterly impossible it would be for the animal to suck a cow. Let him look when a calf is sucking and see how much of the teat it is obliged to get into its mouth to gain the milk, and he will see the fallacy of his statement. The hedgehog could not do it if he were willing. As regards, then, the habit of the animal being such, it is neither a fact nor indisputable.

"A MASTER GARDENER" says bullfinches never come into gardens. Perhaps he can tell me how it happened that my gardener has killed between thirty and forty in my own garden this year. Before I had the bullfinches destroyed I did not get a bushel of fruit from about fifty Plum trees, so numerous was this variety of bud-eating bird. No doubt the sparrows and greenfinches do much harm, and yet my Gooseberry trees are scarcely touched since I destroyed the bullfinches, though I may state that there are hundreds of sparrows that come every night to sleep among the evergreens in different parts of the grounds. This year they and the greenfinches have pecked the Primroses and Polyantheses sadly, but on examining many of the flowers I found several which had been much eaten by insects, therefore I have the idea that the birds were after them. As regards the tomtits I never have any destroyed. The buds they peck out mostly have insects in them, or eggs of insects on them. If the crops of the tomtits are inspected there will be no buds found in them, while I have found that of the bullfinch full, and those mostly bloom buds. This latter bird is the only one I wage war against; all the others do more good than harm.—HARRISON WEIR, *Weirleigh, Brencley, Kent.*

CUCUMBERS FOR THE MILLION.

KNOWING that Mr. Luckhurst can grow Cucumbers by the hundred, I have thought that he and others might be interested in knowing that there is a man not far from here (Brambletye) who, by putting theory into practice, can grow them by the thousand. Some six months ago he became possessed of some old greenhouse lights, and formed them into a lean-to pit 60 feet by 8, with a back path and a flow-and-return hot-water pipe; half of this pit he used for propagating bedding plants, the other half for growing Cucumbers for sale.

Having purchased a quantity of good stable manure he placed it in this pit in the usual way; in the next part was growing his Cucumber plants, thus acting on Mr. Luckhurst's advice—that growing them at home is preferable to fetching them from a distance. I saw the plants soon after they had been planted in their place in good turfy loam from an old pasture, and so planted that the roots can run down to the bottom of the pit for food as they require it, the varieties being Rollison's Telegraph, Masters' Prolific, and Tender and True, all trained on horizontal wires. I called to see them on Saturday, April 14th, when to my astonishment, in the brief space of three weeks since I last saw them, there were Cucumbers by the thousand. I counted in the space of 1 foot twenty-one fruits from 12 to 6 inches long, a sight scarcely to be credited. I shall be glad to accompany Mr. Luckhurst to see this wonderful crop.

The best of the three varieties is Rollison's Telegraph. I counted from five to eight fruits on a joint, and dozens of

joins with that number. I grow Cox's Volunteer, and find it very good for both summer and winter, but I must confess my faith gave way in presence of such a sight as the one referred to. Masters' Prolific is "nowhere," and Tender and True, except for the length and beauty of fruit, cannot be compared with Telegraph. Bear in mind I am not condemning these varieties generally, but only describing them as they appear in this house. Mr. Wallis, the grower, is a market gardener and florist at East Grinstead, and would be pleased to show anyone his Cucumbers "for the million."—SAMUEL JENKS, *Brambletye.*

OUR BORDER FLOWERS—FUMEWORTS.

We have not a more graceful race of hardy herbaceous plants for border decoration than the Fumeworts. They are beautiful in every sense—in foliage, flowers, and habit. It was predicted long ago that *Dielytia spectabilis*, like the China Rose, would find its way into every cottage garden; it has found its way into many, but it will be a long time at the present rate of increase before it finds its way into all. A plant possessed of such intrinsic merit, and with such pleasing properties to recommend it, ought not only to be in every cottage garden but in every cottage window and greenhouse. I can imagine what a thrill of delight would run through the mind of the celebrated Fortune when he first gazed on this charming plant in John Chinsams's garden. When first introduced it was the admiration of all, and was eagerly sought after, but in many places it has had to give way to others; yet it retains all its useful properties for both in and out-door purposes, and for cut flowers, where such are in demand, it is invaluable.

Dielytia spectabilis delights in a rich, light, well-drained soil, and a sheltered sunny situation, and when established the plants take care of themselves; but the young growths require protection from late spring frosts. It is a free-growing plant and bears cutting well, yielding a succession of flowers for a long season. It may be readily increased by cuttings during summer, also by division of the roots. We have a white variety of the above; at the best it is but a delicate plant, yet when well grown it proves very desirable for indoor work.

We have some other kinds of *Dielytia* which do us good service in the spring and early summer. From North America we have *D. speciosa*, a showy plant but seldom seen; *D. eximia* is an interesting and graceful plant, having naked stalks and drooping racemes of pinkish-coloured flowers; *D. formosa* used to be much more frequently met with than at the present. As spring garden decorative plants they all require the same treatment, and, common as they may be said to be, they are still useful for in or out-door decoration.—VERITAS.

NEW BOOK.

The New Practical Window Gardener. By J. R. MOLLISON. Groombridge & Son.

A PRETTY little volume, giving correct information, but not "dew."

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 16.

THROUGH the greater part of last century the name of Chelsea called up to the London citizen recollections of a very pleasant semi-rural locality. Hither would he, on a chance or stated holiday, folks of all ages from noisy London or busy Westminster, and they would not forget in their way along to take a bun at the noted Chelsea establishment, or as they came nearer the famed Chelsea messes they might refresh themselves with custards. There were the attractions of the College and its old pensioners, the gimpuses to be had of the pleasant gardens attached to the numerous villa residences, and there was the Common with its sand hills affording fun to the youngsters; while some visitors would hark back to their dingy city homes choice plants from Chelsea nurseries, long to be cherished if the smoke did not extinguish their lives. I could fancy the King's Road as it was when the nurseries of Chelsea were at their best had somewhat of the aspect of that part of the Edgware Road that runs through Maids Vale and Kilburn, though this now-a-days is fast undergoing an alteration which is making it appear more town-like.

It would seem, however, that it was not until the reign of George III. was far advanced that the nurseries of Davey and Colvill became famous, for although Chelsea had many gar-

deners at an earlier period, they devoted their attention to the useful rather than to the ornamental. Colvill's nursery the visitor to Chelsea first saw, the ground of that extending some distance northward towards the Blacklands estate, but not joining; the open ground once occupied as a market garden by the family of the Catlenghs, and on which now stands St. Mary's convent and schools, Cadogan Terrace, approaching what was called the "Pavilion," and which has recently been demolished to form a new line of road. Colvill's ground had a rather irregular shape, but that it did cover a large space would appear from the description of its various buildings. An old plan of Middlesex of the date of 1745 shows a lane turning out of the King's Road opposite the Military Asylum (now Blacklands Terrace), which probably bounded the London side of Colvill's nursery; and on the west the boundary can be exactly fixed, for it was in the line of a street now named "Keppel," and not so many years ago "Butterfly Alley," once a walk with neat hedges on each side. No doubt it really had once its butterflies, attracted to the spot by the flowers in the gardens and greenhouses of Colvill and Davey, for this lane separated their grounds. Mr. Pratt, an occasional visitor to Chelsea and a poet, whose "delightful" and "exquisite" verses had a small circle of admirers, commemorated these in a poem, from which we may extract a few lines:—

"Where smiling Chelsea spreads the cultured lands
Sacred to Flora a pavilion stands;
And yet a second temple neighbouring near,
Nurses the fragrance of the various year,
Of Davey this, of Colvill that, the care,
While both the favour of the goddess share;
But not for her—the Deity of flowers—
Alone the Incense breathes—still higher powers:
Fair Venus marks each temple for her own,
And Fashion sits upon a blossomed throne."

The imagery savours of the ludicrous, but we let that pass as we turn to the prosaic account of the nursery belonging to Colvill, which we find in the pages of the usually veracious Faulkner. The principal conservatory lay a little back from the King's Road, and, says this author, "it was scientifically divided into two compartments, the largest part occupied by what are generally termed greenhouse plants, which are planted out in a bed of earth, and grow as luxuriantly as if they were in the soil and under the clime of their respective countries. The other part consists of tropical plants, and requires to be kept up to a tropical heat throughout the year." Then, with a frontage to the King's Road, another handsome conservatory was almost exclusively occupied by Geraniums, and here were reared many of the specimens described and figured in Mr. Sweet's work on the Geraniaceae. There were also smaller houses for exotics, heated both in winter and in summer; in one of these a display was made of the genus *Amaryllis*. The sight of three hundred plants blooming at once seems to have rather astonished the Chelsea historian. In another house of some altitude was placed the trunk of a large Elm, to which were nailed in various positions shells of cocoa-nuts; and parasitical plants, many of them *Orehidaceae*, were inserted in these. Colvill's establishment was closed about forty years ago, making way for a row of shops which until recently retained the name of the former resident.

About Mr. Thomas Davey's nursery there is not much on record, but it probably was at first a nursery and market garden combined, for early in this century he disposed of a part of his ground to the Messrs. Downing, who removed their floor-cloth establishment to the north side of the road from its position nearly opposite, and Davey continued cultivating the remainder of the ground until his death in April, 1833, at the good age of seventy-seven, after which the land was soon let on building leases. An old resident in Chelsea, the late Samuel Shepherd, F.S.A., wrote some memorial lines on Davey, representing his flowers as mourning his decease, and concluding with this stanza:—

"Though sun and showers each following year
Shall with new life your blossoms rear,
No more on earth will he appear—
From life he's fled;
But in the dark and dreary tomb
No more his pleasing toil resume,
While you each year shall bud and bloom
Though Davey's dead."

This gardener furnished one of the many examples adducible that the horticultural business is very favourable to longevity, though it may develop in some men rheumatic affections, often painful yet not materially abridging life. A shop just beyond the premises formerly occupied by the Messrs. Downing is said to stand where the entrance to Davey's nursery was; also it

is said that both were much "patronised by the nobility." Flanking Chelsea Common, which was situate between the King's Road and Brompton or Little Chelsea, there were at one time orchards of some extent belonging to the market gardeners, and I am afraid some of those who were predecessors to Colvill and Davey in the King's Road were not overscrupulous about appropriating some part of the common land for their use and benefit by insidiously shifting the boundaries of the ground they had in cultivation. The parish books, moreover, show one instance at least where the Chelsea gardeners got into trouble because they took the liberty of digging pits on the common for the purpose of fermenting their manure in the manner then much in vogue. The ponds here were doubtless made free use of by the gardeners. It should be remembered that in Pond Place, in the Fulham Road edge of the common, once lived William Curtis, whose "Botanical Magazine," started in 1787, attained a sale which was remarkable ninety years since, and who was one of the earliest who advocated the formation of natural history societies, which should be at once scientific and friendly in their tone. Curtis made an attempt at a botanic garden in that unpromising locality Lambeth Marsh, and after eighteen years' occupancy he removed his plants in 1789 to a nursery at Queen's Elm, Brompton, concerning which more hereafter.

Returning to the King's Road we next observe that the land on which the Royal Military Asylum was built at the commencement of this century was part of the glebe of Chelsea, and doubtless cultivated by market gardeners at an earlier time, though nothing particular survives relative to its history. A little farther on was a nursery garden nearly opposite to Colvill's and Davey's establishments, occupying, I suspect, the open space leading down to the principal entrance of the Chelsea Hospital, now "Royal Avenue," and probably joining the old house called "Whitelands," and an old resident tells me it was known as "Whitelands' Nursery." This went the way of many other London nurseries—disappearing, and leaving no trace; as did also another once belonging to a Mr. Moore, which was a short distance beyond Davey's nursery, on the north side of the King's Road. Of all the nurseries dotted along the part of the King's Road that associated with the name of Little alone remains, and still does some amount of business, having been honoured for years past with occasional royal patronage. I am unable to carry its history farther back than to the time when it was owned by the grandfather of the present proprietor; it was then more extensive, having undergone encroachment during this century. There were once sufficient fruit trees at the rear to afford temptation to the Chelsea boys, for a resident remembers that when he was a youngster about thirty years ago he was at this nursery on an evening visit, and on a sudden alarm being given that there were depredators amongst the fruit he and others rushed out—half in jest, half in earnest—to scare them off, armed with pokers, sticks, and whatever missiles were easily attainable. The ground, now much enclosed by houses and overshadowed by a factory, is below the level of the adjacent land, insufficiently drained; but Mr. Little does not cultivate much save under the protection of glass, and the generation will soon rise up when one might seek in vain for traces of this nursery. Probably it only awaits the expiration of a lease to vanish, as did the establishment of Mr. Rolle, formerly near Chelsea Vestry Hall, not many steps beyond Little's Nursery, and reported to have fronted the road where Argyll House now stands. This was but a small establishment in proximity to it, and on the opposite or north side of the road was the more extensive property for many years in the possession of the Hutelins family.

The history of the Hutelins goes back a long way in the eighteenth century. There were market gardeners of this name in the Five Fields, and also at Kensington; at the latter place there was ground belonging to a Mr. Hutelins subsequent to the occupancy of the Chelsea land by houses and other buildings. At one period this property was called "Chelsea Farm," but it must be distinguished from another Chelsea farm farther west, and close to the river. The market gardens belonging to Mr. Hutelins seem to have occupied that block in the King's Road which lies between Robert and Church Streets; just by the latter, where the market garden ended, the road narrowed considerably, and a bar was fixed across, there being a path for foot passengers only upon one side. Oakley (now Carlyle) Square, probably Chelsea Workhouse, and two or three lines of acres cross the former site of these market gardens, a small strip of which—situate between Robert and Arthur Streets, and

attached to a private residence belonging to Mr. Adams—produced vegetables, fruit, and flowers until five years ago, when that also was built upon. The majority of the houses sprung up between 1820 and 1830, but one single farm built by the old burying ground was taken off the garden land by Sir Hans Sloane at an earlier date, perhaps about 1740.—C.

PEAT FOR FERNS.—Notwithstanding many examples proving the contrary, peat is considered by many growers to be indispensable. Good peat will grow Ferns admirably, but bad peat is not nearly so good for them as loam and old leaf soil. Ferns in nature are far more frequently found growing in loam than in peat, and some of the finest under artificial cultivation have a great proportion of loam in their compost. The excellent examples of *Adiantum gracillimum* recently exhibited at South Kensington by Messrs. Standish appeared to be growing in almost all loam, and there was evidence that copious supplies of manure water had been given to them. We shall be glad to have the experience of others on the question of giving liquid manure to Ferns, as many growers consider it to be fatal to those plants—a few ruling to the contrary. It is almost certain that the splendid plants of the Gauze Fern referred to had been supported with liquid manure.

NOTES ON VILLA AND SUBURBAN GARDENING.

"He that loves a garden loves a greenhouse too." These are the words of the poet Cowper, and apply as forcibly at the present time as they did a century ago. Horticultural science does not retrograde, but love for the garden and greenhouse is the means of bringing enjoyment as well as health to many. Almost every villa possesses a greenhouse of some kind, and in this house a variety of plants are expected to grow. There are, as a rule, no specialities here. It may contain a few Geraniums, a few Ferns, or a few of something else. Just a little of everything is cherished with tender care; something that will bring gayness and enjoyment all the year round. Just now extra attention is needed in the greenhouse as well as in all other departments of gardening. A good and varied selection of plants was given last week in answer to a correspondent ("A LADY GARDENER"), and if this selection is cultivated with anything like success there will always be something in bloom as the proper time comes round for the different kinds of plants.

The principal matters at the present leading to success are watering and shading, and if the greenhouse is not covered with Vines sufficiently to break the rays of the fierce midday sun some kind of shading must be provided—a blind erected so that it can be pulled up and let down as required is the best; but a cheap kind of shading is made by covering the glass with a mixture of skim milk and whiting, applying it with a common paint brush.

It is not an easy matter to mention all the little requirements necessary to the well-being of plants, or to lay down any hard-and-fast rule for watering them; but watering repeated less often when the plants are in a young state or in cold quarters is very injurious, for it sours the soil, and constant driplets is the worst kind of watering of all. Moisture through the whole ball of soil is of the utmost importance, and in watering you must be guided partly by the state of the outside atmosphere (for some days are more drying than others), the growths of the plant, and the quantity of roots to receive the moisture. At this season much encouragement may be given to the growth of plants by watering and damping the stages and paths and closing the house early in the afternoon. The temperature may appear high at the time, but it will fall rapidly as the sun goes down, and the extra heat husbanded is highly beneficial to most plants, and with the moisture, is preventive of some kinds of insects. If Vines are in the same house they will delight in such treatment.

Any cuttings of *Fuchsias* inserted last month may now be potted singly; they will soon grow and make healthy little blooming plants. Repeat any plants that are potbound, and if the ball is very dry give it a good soaking in a pail of water, giving the soil time to drain before potting. Use plenty of drainage, and press the soil well down around the ball.

Hycinths and *Tulips* which have done blooming should not be turned out to "rough it," sometimes being saturated and at other times parched, but they should be planted-out in any spare piece of ground where they will take care of themselves, and be of some service in the borders in future years. A lady of our acquaintance always served her *Hycinths*, &c., in that way after they had flowered in pots and glasses, and her beds were very gay every spring with *Hycinths*, *Tulips*, *Anemones*, and *Turban Ranunculuses*. As soon as these went out of bloom they were taken up and laid in a border to ripen; during the summer they were cleaned and stored away in paper bags for the following autumn, when they were planted again and

bloomed in the spring with the same results as before. It will only be right to say the soil was light, sandy, and fertile, and the place in the south-west of England.

Lily of the Valley, *Deutzias*, and *Spiræas* which have ceased blooming should be turned out of their pots and planted-out. They will take care of themselves unless the summer is very dry, when they will need watering, and they can be lifted and potted again in the autumn.

Gladioli should be planted at once in ground that has been previously dug and manured, or in borders, as the case may be, planting the bulbs about 4 inches deep and from 9 inches to a foot apart. There are many varieties of *G. Gandavensis* which may be purchased very cheaply, and the whole of them are very effective when in bloom in the autumn. We plant many bulbs of *Brenchleyensis* amongst *Rhododendrons*, where they do well, throwing up their fine scarlet spikes amongst the deep green foliage of the *Rhododendrons*, producing a very pleasing effect.

Hardy ferneries are welcome additions to every villa residence and many an out-of-the-way corner, but for the rockery and its occupants would be very gloomy and unsightly. Rockwork can be constructed of almost any material—rough blocks of stone, bricks run together in burning at the kiln, or ordinary bricks put together in irregular masses with Portland cement. Rockwork should be built in the most natural manner possible, but of course must suit the requirements of the place. Plenty of room must be left for soil to grow the Ferns, and it is very important in planting the fernery to arrange the evergreen and deciduous kinds so that in winter, when the deciduous kinds have lost their fronds, the evergreen Ferns will give a cheerful appearance to the rockery. The present is a good time for planting, and the following are good useful British and hardy kinds—*Scotopendrium vulgare*, *S. v. crispum*, *S. v. cristatum*, *S. v. marginatum*, *S. v. ramosum*; *Polypodium Phegopteris*, *P. Dryopteris*, *P. vulgare*, and *P. v. caudricum*; *Blechnum Spicant*; *Osmunda regalis*, *O. r. cristata*; *Allosorus crispus*; *Lastreas Filix-mas*, *L. F.-m. crispe*, *L. F.-m. cristata*, *L. F.-m. polydactyla*, *L. F.-m. pumila*. *Lastreas dilatata*, *spinulosa*, *montana*, and *Thelypteris* are all distinct and good. All the Lady Ferns are very distinct and beautiful, and comprise a large section. *Athyrium Filix-femina*, *A. F.-f. Fieldii*, *A. F.-f. Fricellii*, *A. F.-f. Vernoniae*, and *A. F.-f. Victoriae* are elegant. There are numerous other varieties belonging to the original species, but the above are attractive, and can be purchased very reasonably and be grown with little care and attention.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

Last week we were writing of more rainfall and bemoaning the saturation of the ground, but before the words appeared in print the wind changed to east by north, and in less than twenty-four hours clouds of dust were drifting about with the violence of the gale, and many plants were wrenched off at the surface of the ground, while some *Chrysanthemums* that it was necessary to place out of doors had their leaves greatly injured.

HARDY FRUIT GARDEN.

The surface of the ground was caked by the rains, and an opportunity was offered to run the Dutch hose through between the rows of Strawberries. We never dig amongst the young plants that are intended to bear fruit this season, consequently the ground only an inch or two below the surface is thoroughly permeated with roots, and to drive the hoe deeply into the ground would cut them to a considerable extent. The surface is therefore merely stirred, and when the plants have made some growth so that the flower-trusses can be seen, the ground between the plants will be mulched with manure. This may not be done so early if the weather is dull and wet, as the object of mulching is to prevent evaporation from the ground in hot dry weather, and especially if it has been necessary to water the plants. Many persons plant-out those plants which have been forced early, so as to secure a crop of fruit in the autumn. The best varieties for this purpose are *Black Prince* and *Keens' Seedling*.

No plants should be saved for planting except those that have borne fruit. Some plants come barren and should be destroyed, as they are not likely to bear fruit either in pots or planted-out. Our first lot of Strawberry plants brought-in from a large nursery were a source of considerable annoyance in this respect: more than half of the plants of some sorts bore abundant healthy leaves, but the time for fruit never came. We did not save runners from these barren plants, but only from the strong, healthy, and free-bearing plants, and in the result of this care in selection it is that we could now show flowers amongst them, and not one that is not showing flowers amongst them.

If the plants have been carefully hardened-off by first being placed in a cooler house or cold frames before placing them out of doors, they may be planted in prepared ground at once. Each plant should be in a shallow depression, and the soil should be placed very firmly round it. If the weather is dry

the plants must be watered, as the roots are formed into a compact mass so that water cannot penetrate into it rapidly enough to sustain the plant. Before planting them out it is well to see that the leaves are free from red spider. This pest is very troublesome and does much damage in little time. We dip the plants in a pail of water to which 3 oza. of soft soap and half a pint of tobacco liquor has been added, laying them on their sides afterwards so that the solution may drain off without running into the roots.

Most of the Pear, Plum, and Cherry trees are in blossom, and some of them have even passed the blossoming period. We have done no work amongst them except to put on a few grafts. This work should be finished at once, and if necessary the hoe may be run through the ground under the trees.

PINE HOUSES.

Owing to the greatly increased light and higher temperature out of doors the night temperature where fruit is swelling should now be 70°—that is, if it is desirable to have the fruit ripe as quickly as possible. If it is not necessary to do this 65° is just as healthy a medium for the plants. Many cultivators recommend syringing the plants when the house is closed in the afternoon; but this is really not necessary, and water applied in this way is nearly all conveyed down the leaves to the base of the stem, where the soil becomes sodden and in the worst possible condition to supply the plants with the nourishment they require. It is a good plan to syringe underneath the plants during hot drying days, and to water the surface of the beds as well as the walls and paths of the house. Fruiting Pines are not benefited by much moisture in the atmosphere; in fact a close moist atmosphere causes an overgrowth in the crowns, which takes away the sap that ought to be appropriated by the fruit. Succession plants should be grown-on in a very similar temperature to that of the fruiters. The plants ought now to be potted into their fruiting pots without any delay. Hot-water pipes fixed in a chamber underneath the bed is much the best method in which to apply bottom heat. The heat in the tan bed will then last at least six months, and if the old tan is then just turned over and mixed with some fresh the heat will be maintained for some months longer.

CUCUMBER AND MELON HOUSES.

Cucumber plants require looking over at least once in ten days to thin out all old wood and to replace it with the young bearing shoots. It is difficult to keep the plants quite free from insect pests, which attack the leaves when the warm weather sets in. Red spider may be kept down by syringing, but trips will not yield to clear rain water, and any solution that will kill the insect is injurious to the leaves. We generally destroy it by fumigating the house with tobacco smoke, but this may be too strong for the leaves, and it is better to fumigate two or three times than to run any risk from an overdose.

Melons that are at that stage when the fruit sets require daily attention, and it is as well to manage it so that a sufficient number of female blossoms are in flower at one time, as if one or two are set two or three days only before the others, they will advance at such a rapid rate that the others suffer. The fruit sets best in a moderately dry atmosphere. The lateral growths of Melon plants require very similar management to that of Vines as to stopping and training, and the growths ought not to be crowded too closely together, else the fruit is not likely to be of good quality. Many persons shade their Melon houses; but if it is necessary to do this it is a sign that the plants are not in good condition, probably owing to their being grown in a hot moist atmosphere and air not having been freely admitted to them when practicable. The house should not exceed 65° at night, and if the temperature falls to 60° no harm will accrue to the plants.

PLANT STOVE AND ORCHID HOUSES.

Shading is one of the most important items of the details of the culture of stove plants. It may be underdone, but it is more frequently overdone. In dull cloudy weather shading is positively injurious to plants underneath it, especially Orchids and some flowering plants. The blinds ought to be fixed so that they may be easily let down or rolled up.

We have a number of plants of *Dipladenia Brearleyana*, some of them trained to the roof, and others to circular trellises in pots. The flowers are of the most handsome description, and are well adapted for decorative purposes in the drawing or dining room. Mr. Baines, who grew *Dipladenias* better than any other cultivator, says that the plants require very little water at the roots, and our own experience agrees with this; they also luxuriate in a high moist temperature when growing.

We have out down a number of plants of *Poinsettia pulcherrima*, and also the new variety *pleinissima*. Those who have not yet added this new sort to their collections ought certainly to do so, as it is destined to supersede the old variety not only for its greater brilliancy but also for its more lasting character. The plants ought not to be placed in a high temperature—55° is suitable; and they ought to be placed near the glass and be freely exposed to the sun.

Many species of foliage plants are liable to be attacked by red

spider; and as the value of these plants consists in the leaves being kept healthy the pest must be promptly sponged off, and the leaves be kept free from its presence by frequent and regular syringings.

One of the most showy plants we have at this season is *Anthurium Scherzerianum*. Its brilliant-colored spathes are very striking; and one great advantage the plant has over many others is that the spathes not only last a long time in beauty, but they are not easily injured by syringing or any other cause. Keep the leaves of a healthy deep green colour and free from scale. The plant as to treatment requires the temperature of a Cattleya house, and the plants ought to be potted in the same way, and similar material ought to be used—viz., the pots to be half filled with clean potsherds; and the compost very peat, sphagnum moss, and a few potsherds and bits of charcoal mixed with it.

Many species of Orchids are now throwing up flower spikes, and they require frequent watching with a good lamp at night to destroy slugs and snails, which not only eat the flowering growths just as they are starting, but also the fresh young roots which are just forming. Those Orchids that are in flower ought to be preserved as long as possible. To do them justice they ought to be placed in a house with a little cooler than that wherein the plants were growing, and the atmosphere should be kept drier; a very moist atmosphere causes the flowers to be disfigured with small damp spots. At this season there are many species that require repotting, and it ought to be done without any delay. In former papers full instructions have been given as to the potting and basketing of Orchids. It is important to pot them at the right time—that is, just when they start into growth. If Orchids are shifted at a time when they are not about to make young roots they seldom do well. Many species of *Dendrobium* are subject to the attacks of red spider. A good plan is to syringe the leaves well in the early part of the day with water that has been standing close to the hot-water pipes. *D. Devonianum* suffers much from the attacks of this pest.—J. DOUGLAS.

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (G. P.).—The "Cottage Gardener's Dictionary" contains all that you want.

WILD FLOWERS (C. Dinale).—We cannot state the number. All natives will be published that produce flowers, but not the Cryptogams.

AMMONIA (G. H.).—There is not any ammonia in superphosphate of lime. Cannot you obtain ammoniacal liquor from gasworks?

MARÉCHAL NIEL DECATYNG (T. Rose).—The stock cannot supply sufficient sap for such luxuriant growth. You do not state what stock it is upon.

POLYANTHUSES.—Mr. Cudwell, florist, Waukgate, has sent us specimen flowers; they are very varied in colour and good pipes.

QUINCE TREES (Mrs. Henderson).—They are very hardy and require much moisture. They usually succeed best when growing by the side of a stream or pond, and as standards.

MILDEW ON STRAWBERRIES (J. B.).—The fruit set is small and ill-shaped, but only contains slight evidence of mildew, and there is no mildew on the leaves. There is no remedy for the unsatisfactory condition of the fruit in its present advanced state. The most certain way of preventing a similar occurrence is to obtain runners from a fresh stock of young healthy plants. In your case we think this change is very desirable.

GRAVEL (W. D. T.).—One ton of gravel will cover about 36 square yards of walk an inch thick.

LEAVES INFESTED WITH BLACK FUNGUS (M. A. C.).—The leaves have their upper surface coated with a black fungus, but there were no traces of insects upon them. Probably the points of the shoots are or have been infested with aphid, which would succumb to fumigation with tobacco or kerosene water. The fungus may be washed off with a sponge, employing tepid water holding in solution 2 oza. of soft soap to a gallon.

CENTAUREAS FROM SEED (*Idem*).—Sow at once in a pot or pan well drained, filling to within half an inch of the rim with a compost of two parts loam and one part leaf soil, with about a sixth of sand, the whole well mixed and passed through a half-inch sieve. Make the surface smooth, and scatter the seeds evenly and thinly covering them about a quarter of an inch deep with fine soil, place in a hotbed, and keep moist, but avoid making the soil sodden. When the plants appear keep them near the glass and moderately ventilated, potting them off singly into small pots when they show the second leaves, returning to the hotbed, keeping rather close, and shaded from bright sun until established. When growing remove them to a cold frame, admitting air freely, hardening well off before planting out. The plants will hardly be large enough for planting out by the beginning of June. The seed for that purpose should have been sown early in March.

PLANTS FOR HANGING BASKETS (May).—We presume frost is excluded from your cool greenhouse. *Saxifraga Fournetii* var. *S. sarmentosus*, *Tradescantia zebrina*, *Lilium peruvianum*, *petraeolites*, *Monarda*, *Senecio*, *Antirrhinum procumbens*, *Alyssum variegatum*, and ivy-leaved *Geraniums* are suitable.

WRITE CAMELLIA FOR BACK OF VINEY (Idem).—*Alba plena*, though old, is one of the best; *Mathotiana alba* is very good, as also is *Pimbratis*, which has the margin of the petals beautifully fringed. Any of these would suit. Plant them out, which is preferable to growing them in pots, keeping well supplied with water, and trained to a trellis.

MOSS IN SEED PAN (Idem).—Do not attempt to remove the moss from the pan containing *Begonia* seed, but continue the pan in gentle heat, keeping moist. It is not unlikely that the seed will yet vegetate, if it has not already done so.

PLANTING OUTDOOR VINES (Tyro).—The Vines ought to have been pruned some time ago, but we should yet do so, cutting back the growths of last year to within two eyes of their base, and the extension of the canes or rods to about six eyes. If the Vines have been neglected we should thin-out the rods, and lay-in fresh canes at about 18 inches distance apart, and rub out the old canes as they break where they are closer together than 18 inches distance. If the canes so to induce their breaking well at the base, and after they have broken and are about an inch long secure the shoots to the wall.

WINTERING CARNATIONS (Idem).—Ours have wintered well in the open ground, the soil being light and well drained, but they have been much preyed upon by slugs. We should pot the plants in September as you propose, and place them in a cold frame on ashes in a sheltered situation, and keep them air free during winter, the object being to keep them cool and dry; and at the same time afford them protection in severe weather by placing mats over the lights. Very little water will be required during the winter. Harden well off, and plant out from the pots about the middle of April. They will then flower properly during the summer.

TRY AN EXPERIMENT (Idem).—The idea we presume is to grow Carnations in summer only, having a pit for hot doing to give the plants a start, planting not being done until March or April. It will suffice in that case if the front wall be 3 feet high, 2 feet within and 1 foot above ground, the back wall being 2 feet higher or 5 feet, and upon these will be the wall plates. The pit should face the south, and be in a sheltered position, but not shaded by trees or other objects.

PLANTS FOR A SHADED BORDER (Idem).—The border will be most suitable for Ferns, but we have had the following plants do fairly in such a position:—*Lily of the Valley*, *Ajuga reptans*, *Aemonea cymbria*, *Aralis blanda*, *Aubrietia deltoidea*, *Hemerocallis lutea*, *Mecoposia cernua*, *Mimulus crispus*, *Myosotis dissitiflora*, *Lonicera*, *Primrose*, *Trollius europaeus*, *Vines* Major, *V. minor*, and *Violets* in variety. The wall may be clothed with Ivy, *Jasminum nudiflorum*, and *Virginian Creeper*.

TREATMENT OF ORCHIDS (M. P. D.).—All the Orchids you name will succeed in a cool stove—that is about 55° at night. The plant has been eaten by some insect. Take a lantern and search for it at night.

PEACH TREE ON SHADY SIDE OF HOUSE (J. W.).—If a Barrington Plant will not grow, it is worth trying to grow such a tree; a Fig tree would not give much satisfaction. Try an Early York Peach tree. It is a free bearer, and ripens much earlier and earlier than Barrington. The best Rose for your purpose is H.P. Duke of Edinburgh.

PROPAGATING CARNATIONS AND CLOVES (A. H.).—Cloves and many varieties of Carnations are not easily propagated from cuttings, but some sorts are, and the small side growths of them strike well in a little bottom bed. The best way for all the best way is to lay them down in August, you are then sure of good strong flowering plants for next year.

AIR ROOTS FROM VINES (M. C.).—This is a very common occurrence with early forced Vines, and it is owing to deficient root action combined with a moist atmosphere. You may either leave them on or cut them off as you please. We have tried both ways, and have not seen the Vines suffer in the least.

TREATMENT OF VINES (J. B.).—As the young Vines had only started about 8 inches, it would not have checked the growth to have shaken the soil from the roots; but it would have been better still to have shaken them out as soon as they started, and laid the roots out in shallow boxes made roughly, and at the time of planting the boxes might have been dropped into the place where the Vines were to be planted, pulling the boxes to pieces without disturbing the roots. As you say the old ball of roots is "quite solid" and few roots started from it, we do not think the Vines will do well until these balls are broken up. It was a mistake not to have done this in the first instance.

REINETTE GRISSE APPLE (A. K. B.).—A very fine dessert Apple of first-rate quality. Our "Garden Manual" will suit you. Free by post for twenty pence stamps.

PANIES FROM SEED (Tyro).—Mr. McIntosh gives the following excellent directions:—"The beginning of May, August, and September are the best seasons for sowing the seed saved the preceding autumn, spring, and summer. All seed procured after the middle of September should be kept till the May following. Sow in pans in a compost passed through a half-inch sieve. Sow thickly and place the seed pans in a gentle heat. When the seedlings appear great care must be taken in watering, as the young plants are apt to damp off close by the surface. Abundance of air is necessary, and the operation of picking off into nursery beds should be attended to as soon as the plants are fit to handle. A partially shaded border is the best place for them, and if they are not for ten days after removal with a glass frame so much sooner will they become established."

VINE LEAVES SCORCHED (J. M.).—Your letter does not afford sufficient data to enable us to trace the cause of the scorching of one Vine, the remaining Vines being in good condition. The leaves sent are flimsy, and suggest that the Vine is not adequately supported. We think if you were to carefully remove the surface soil and replace it with a mixture of rich garden loam and bones, and give rather more water, the effect would be beneficial.

PELAGONICUM SEEDLING (W. G. Sutton).—The colour is rich, but the petals had all fallen. The *Cinerarias* are of average merit.

TIMPS (Cabrero).—Try dusting the Cucumber plants frequently with Scotch snuff.

INSECTS IN VINEY (J. St. Johns).—The pretty green fly you have sent as infesting your viney is a species of *Sargus Chrysoeris*, the larva of which are dirty footless maggots found in the earth, which feed on decaying veget-

able matters. The flies are in no way injurious to the Vines, which must have suffered from some other cause.—L. O. W.

NAME OF PLANTS (S. M. W.).—*Erica mediterranea*. (*H. J. R.*)—*Eberberis Darwidii*. (*A Constant Reader*).—We cannot name from leaves only.

POULTRY, BEE, AND PIGEON CHRONICLE.

POULTRY AND BIRD NEWS.

We are sorry to announce the death of another loyal poultry fancier.—Mrs. Julia Wyld of Uckfield has passed away from us. She was, perhaps, not generally known as a Coochin breeder, but visitors at the Southern shows will have often noticed her White Coochins at the different exhibitions. She was a thorough fancier, and knew well the points of a Coochin-China fowl, and will be much missed by a large circle of friends.

We have to-day received the schedule of a small poultry show to be held on August 8th at Malton (Yorkshire). We notice that in this apparently local schedule there is a class for Silkies. We are glad to see it, and to find the culture of this useful breed is gaining ground, as hitherto we believe the classes for the variety have been confined alone to the large exhibitions.

It will be, perhaps, remembered that after the Crystal Palace Show in November last a gentleman claimed £50 for his Houdan cock, as the bird had been entered at this price, but sold for 30s. by the Committee. The reason of this, however, they alleged was because they had been advised by letter to reduce the price from £50 to 30s. The sender of this missive has not come to light, and the owner of the bird summoned the Committee. They, however, paid £6 into Court, and this was accepted. It is surely a great lesson to all committees to be very careful how they accept the reduction of the price of a pen of birds by writing or telegram, as it would be the means of unprincipled people obtaining valuable specimens at a low price. In this case the Houdan was unnoticed, and therefore it makes the transaction the more mystifying.

Mr. Rule of Harrogate, Yorks, the other evening at a meeting of Pigeon fanciers at Evans's Hotel, Covent Garden, explained a new method which he has lately invented for marking young Pigeons. He proposed to place round the leg of the bird an indiarubber ring, which is to have a metal wire in the middle of it to prevent its being cut through or removed to another bird. This ring is to be closed by nippers, which will be able to impress on the band a date and a mark of a private nature where the two ends join. Mr. Rule then proposes to license this invention to societies and fanciers. We should imagine that the system will be of much value if the stamp or impression made by the nippers is unable to be copied and used by unprincipled people. Several influential fanciers were present at the meeting and discussed the matter.

The entries for the Taviestock Show close on Saturday next, those for the centennial meeting at Bath on May 2nd, and for Banbury on May 5th. The latter show is still to be held, we understand, though the Oxfordshire Agricultural Society have postponed their meeting until September in consequence of the outbreak of the cattle plague. We hope all will patronise Mr. Herrieff's endeavour to make his show a good one.

The entries for the Bath and West of England Show are the largest that the Society has ever had.

We have long wished that the Royal Agricultural Society embraced poultry and Pigeons in their meetings. They are to hold their annual show this year at Liverpool, and as this is a neighbourhood where many good fanciers reside we should like to see them take the matter up and see what they can do.—W.

A PERSISTENT SITTER.

I HAVE a common hen under which I placed a batch of eggs on January 22nd; these were duly hatched on February 13th. The brood was carefully reared for six weeks, and on the 25th of March the hen laid her first egg again. Since that day until Saturday last (14th of April) she has laid seventeen fine eggs, and to-day is now on her second batch of eggs, which she will steadily sit over. Not one of my Brahma hens has been broody as yet, although some have laid since December.—E. D.

[The Editors know of more than one hen that will sit at any time that they are placed on eggs in a nest.]

COCK-DUBBING.—The Sittingbourne Justices sitting in petty sessions had again before them, April 18th, the case of "Murphy v. Manning and another," which had been remitted to them from the Divisional Court of Appeal of the High Court of Justice, in order that they might reverse their decision given in January, 1876. Originally the defendants, John Manning and another, Charles Sayers, publisher, were summoned by the inspector of the Royal Society for the Prevention of Cruelty to Animals, the former for cruelly ill-treating, abusing, and torturing three cocks

by cutting or "dabbing" their combs, and the latter for causing them to be so treated. It was represented to the magistrates that the combs of the birds were cut for the purpose of their being exhibited, and the magistrates dismissed the summons on the ground that the offences charged were not of the class of offences contemplated by the statute. Being asked, the magistrates stated a case for the superior Court. The case came on for hearing a few weeks since, Mr. Waddy, M.P., acting for the appellants, and Mr. Dixon for the respondent. The Court pronounced an opinion that the decision of the magistrates was wrong, and ordered the case to be remitted to them to reverse it. The magistrates now imposed the nominal penalty of 1s. and costs.

GREAT HARWOOD POULTRY SHOW.

The annual Show was held at Great Harwood on Thursday last in the open field, when fortunately (though very threatening in the early part of the day) the weather was enjoyable, and the birds suffered nothing from exposure. The entries in all were about 350.

Game headed the list, Brown Reds winning all the prizes, there being nothing at all striking in addition except a Black Red hen in pen 238 (Johnson). All the *Hamburgs* were very good, and Black *Hamburgs* won in the Variety class. *Cochins* a good class, but the *Buffs* had to succumb to the Partridge, which were most correct and well shown. *Dorkings* and *Spanish* *Brahmas* a rather irregular lot, the first in *Spanish* were a grand pair, very good but badly mated. The best of the first cock was a grand one, but the hen a little "too red"; the second hen best, but the cock lost to a great extent. *Game Bantam* cocks were—first a Pile and second Red, both good, but the rest poor; and in *Bantams* of any variety first were a smart pair of Piles, and second Blacks. *Geese*, *Ducks*, and *Turkeys* were well represented, but unfortunately a capital *Turkey* hen and a *Goose* belonging to Mr. Stott of Preston were found dead on their arrival at the Show.

In *Pigeons* the competition was very keen in almost every class. *Pouters* were—first a grand *Blue* cock; the second a *Blue*, very good, was in excellent order, but evidently young; very highly commended a *Blue* hen. *Carriers* had two classes. In cocks first was a *Black* with capital beak and eye in fine bloom, second a *Dun* not in the best order and losing in eye wattles, in which he is quite deficient. Hens, first a grand *Dun*; second, also a *Dun*, has seen its best. In *Chambler* the winners were *Almonds* and very good. *Barbs* about the best class in the Show, and after the winners had been selected the rest were almost equal; first a *Black* and second a *Red* cock. *English* *Owls* were not a good class, although the winners were grand *Blues*. *Dragoons* were divided into *Blue* and *Silver* and *Any* other colour. In the first *Blues* won, although there were two very good *Silvers* with brown bars, and several very good birds had peary eyes. *Any other colour* *Dragon* were—first a *Blue* *Chequer* and second a *Yellow*, several grand birds and previous winners being very loose in feather, no doubt from the strain put upon them in the breeding loft. *Antwerps* a good class, the winners *Red* *Chequers*, and very highly commended a very *Short-headed* *Dun*. *Jacobins* were good, except that some were too large, but the first was excessively small; both winners *Red*. *Turbits* were good; both winners were spiked, but very perfect in bill and mane—in fact, as regards head properties about perfect. First a *Red* hen and second a *Silver* cock. A capital shell-crowned *Blue* was very highly commended. *Faults* were bent moderate, and *Trumpeters* poor, while the *Variety* class was a good one, and an extra prize was given.

Rabbits had only two classes, but there were some good specimens. *Lops*, first a *Blue*-and-*white* doe, young, but very fine in quality, 22 by 4½; second a *Black*-and-*white* doe, not so soft in ear, but very handsome, 21 by 4½; and third a *Fawn* doe, 21 by 4½. In the *Variety* class first was a *Silver-Grey*, even and sharply silvered; second a *Silver Fawn* Dutch, quite correctly marked; and third a capital *Himalayan*, an extra third going to an *Angora* in good order, long in wool, but a little too coarse.

POULTRY—GAME.—Cock.—1 and 2, O. W. Brierley. Pair.—1 and 2, C. W. Brierley. *Whe*, W. Johnson. *HAMBOURG—Golden-pencilled*.—1 and 2, G. & J. Doughty. *Silver-pencilled*.—1 and 2, J. Stuttard. *Whe*, Rev. J. N. Williams. *Golden-spangled*.—1 and *Whe*, G. & J. Duckworth. 2, J. Jackson. *Silverspangled*.—1, J. Fielding. 2, Studdard. *COCHINS*.—1 and 2, T. Aspden. *Whe*, A. Hanson. 2, DUNBROOK.—1, J. Walker. 2, F. H. H. Spenser. *Black*.—1, J. Fowell. 2, H. Wilkinson. *BRAHMAS*.—1, C. Holt. 2, H. Castlow. *Whe*, J. Walker. T. Aspden. *ANY OTHER VARIETY*.—1, W. Wilson. 2, K. Riley. *Whe*, H. H. Stott. *GESE* AND *BANTAMS*.—Cock.—1, E. Bellingham. Gill. 2, F. Holt. *BANTAM*.—1, Bellingham and Gill. 2, R. H. Ashton. *GESE*.—1 and 2, J. Walker. *Whe*, J. Houker. *DUCKS*.—*Any other variety*.—1 and 2, J. Walker. *Whe*, C. Holt. *ROCKEN*.—1 and 2, J. Walker. *Any other variety*.—1 and 2, J. Walker. C. & J. H. Pearson. *ANY OTHER VARIETY*.—1, J. Walker. 2, J. Houker. *SELLING CLASS*.—1, J. Fowell. 2, Smalley and Barnes.

PIGEONS—Pouters.—1, J. Booth. 2 and *Whe*, J. Kendall. *CARRIERS*.—Cock.—1, J. Kendall. 2, J. Walker. *Whe*, H. Yardley. J. Kendall. *Hen*.—1 and 2, J. Kendall. *Whe*, H. Yardley. *TOURNAIERS*.—1 and 2, H. Yardley. *BARRAS*.—1, H. Yardley. 2, J. Walker. *Whe*, H. Yardley. 2, F. H. H. Spenser. *OWLS*.—Eagle.—1, H. Yardley. *Whe*, W. J. Bellingham. *Chambler*.—1, F. H. H. Spenser. *Blue*.—1, H. Yardley. 2, S. & R. Ormerod. *Whe*, H. Yardley. J. Booth. C. W. Waddington. J. Kendall. *Any other colour*.—1, C. Waddington. 2, W. W. Jackson. *Whe*, H. Yardley. C. Waddington. 2, W. W. Jackson. C. & J. H. Pearson. *ANY OTHER VARIETY*.—1, J. Stanley. 2, H. Yardley. *Whe*, H. Yardley. T. Barker. *JACOBINS*.—1, W. Harrison. 2, W. Dugdale. *Whe*, J. Fletcher. *TURBITS*.—1, T. S.

Stephenson. 2, W. Dugdale. *Whe*, W. Harrison. T. S. Stephenson. J. Kendall. *FASTIERS*.—1 and 2, J. Lovelock. *TURKEYS*.—1 and 2, J. Wood. *SCAS*.—1, J. Butler-Bowdon. 2, H. Yardley. *MAPIES*.—1 and 2, J. Butler-Bowdon. *Whe*, J. Butler-Bowdon. T. Waterworth. *LARGEST BIRD FOR FUTURE PURPOSES*.—1 and 2, H. B. Hayes. 2, W. B. & D. Mead. *Whe*, J. Barlow. J. Nield. Smalley & Barnes. *ANY OTHER VARIETY*. *POULTRY* EXCEPTED.—1 and 2, S. J. Kendall. 2, S. Dyaon. *Whe*, H. Yardley. S. Dyaon. J. Kendall (3). *SELLING CLASS*.—1, J. Kendall. *Whe*, T. S. Stephenson. C. W. Waddington. 2, W. W. Jackson. *RABBITS*.—*Lops*.—1 and 2, T. E. J. Fell. 2, S. W. T. Millet. *Whe*, W. C. Yorke. T. & J. Fell. *Any other variety*.—1, 2 and 3, T. E. J. Fell. 2 and 3, W. C. Yorke. H. Wood.

The Judge was Mr. E. Hutton, Pusey.

EGGS OF DUCKS AND HENS.

An experiment was lately made in France for the purpose of finding the relative value of hens and Ducks as egg-producers. Three of each sort were selected for testing the result by observation as to their relative fertility. Between the let of January and the end of August the three hens laid 257, and the Ducks 402 eggs. Moreover, in the autumn months of the previous year the Ducks had yielded 215 eggs, while the hens had completely ceased laying. Altogether, therefore, the Ducks had produced 617 eggs within the twelve months, as against 257 obtained from the hens. The birds of each class selected for the experiment were of the same age, and, as far as could be judged, of the same relative size and strength. Of course a more extended series of trials must be undertaken before any definite opinion can be given on the relative merits of *Duck versus* hen in the matter of egg-laying. But there are eggs and eggs, and it remains to consider their comparative value as food, as produced by hens or Ducks respectively. This was undertaken by a French chemist, M. Commail, who gave the result of his analyses of both varieties. A hen's egg weighing 60.4 grammes (equal to 15.433 grains avoirdupois) was found to consist of 7.2 grammes of shell and membrane, and 52.2 grammes or 88.07 per cent. of contents, while a Duck's egg weighing 59.8 grammes showed 7.7 grammes of shell and membrane, and 52.1 grammes or 57.12 per cent. of contents. One hundred parts of the contents of a hen's egg contained 26.01 dry matter, 1.03 ash, and 11.27 fat, while the proportions of the same substances in a Duck's egg were found to be 28.32, 1.16, and 15.49 respectively. It follows, therefore, that Ducks are not only the more prolific layers, but their eggs are also richer in fat to no inconsiderable extent.—(*Pet Stock Bulletin*.)

THE SIBERIAN RABBIT.

In recent papers on Rabbits we have often had to express uncertainty as to the exact locality from which each is extracted. In some cases we have endeavoured to show that the names by which the different varieties go are fair criteria by which we may judge of the home in which they first came into existence, while in others we have expressed our opinion that the name given was decidedly inappropriate and deceptive. To these must be added the same by which the animal we now propose describing is more generally known. An old and very favourite name at the time of the late war was *Abyssinian*, while a more orthodox appellation was *Egyptian*. These two facts would lead us to imagine that the north-east corner of Africa is the part that can boast of being the home of this handsome animal. That it comes from Siberia—a land of cold, snow, and ice—a few years' experience in Rabbit-keeping would soon show to be incorrect. The fact is, that there is very much doubt whether or not this breed is a distinct one, or whether it has been brought into existence by means of a cross, judicious or otherwise, between the *Himalayan* and *Angors*, the points of both of which it more or less takes after; however this may be, it is certain that the breed has been in existence quite long enough to warrant its being called a distinct one. If a manufactured breed—if the expression is allowable—it is easy to understand that its homogeneity must and will always remain a matter of doubt. The variety is very popular among the French peasants, and has made very fair headway in this country.

The body of the *Siberian* is fairly long and well proportioned, the limbs not being overlarge or strong; the ears are short and upright; the eye pink, like that of the *Angora*, *Himalayan*, or *Gilbey*; the general appearance and shape is decidedly pretty. The *Siberian* is covered on the body with long silky fur. This fur is delicate to the touch, and should be of a woolly and silky nature, or it is not so good as it ought to be. The head is well shaped, the forehead being generally a trifle prominent. The wool on the head is hardly so delicate as on the body; between the ears and eyes it is perhaps a trifle longer, but below the eyes it is certainly shorter than the general length, which should not be less than four times the length of the fur of a *Lop*, and some of the grand show specimens—notably Mr. Swetnam's champion—have it considerably longer even than this. It cannot possibly be too long—the longer the better; and the finer and more delicate it is to the sight and the touch so much more is the value enhanced. Under the body the fur will not be so long as on the upper portions; it will, however, be found to be, if anything, a trifle softer and thinner.

So far in our description it will be noticed that we have not shown much dissimilance to the Angora or resemblance to the Himalayan; that, however, is to come. We have described the Angora body as nearly as possible, and we may state *en passant* that the main difference between the two breeds that can be seen is that the Siberian is a trifle the stouter and heavier, and the Angora's wool the longer and finer of the two. We now come to the resemblance to the Himalayan. All who have bred Himalayans know, and know to their cost sometimes, that there are certain points which it is essential should be uniformly dark. Just so is it with the Siberian. At the lower extremities of the ears, the upper extremity of the nose and tail, and of the feet the long wool suddenly ceases, and in place of it we see a very short black or brown fur; this is exceedingly short, and lies very close to the skin. These points that I have mentioned—viz., nose, ears, feet, and tail should be as dark as possible. Occasionally an specimen is met with, with these extremities jet black and of a shiuy hue; this, however, far from being the rule, is certainly the exception. A dark brown colour is by no means bad, but sometimes, and "sometimes" in this case means often, the colour is very light brown; and sometimes, and "sometimes" hardly means seldom now, it is a grey. Especially is this the case with the feet. The head markings generally present a pretty fair shade, and the tail is seldom looked at; the feet, however, give sad trouble, and schemes, plans, and dodges that are resorted to with a view of making these points dark are innumerable. We may devote a chapter to the various contrivances in vogue for the purpose of accomplishing the desired object, but they are far too numerous and lengthy to be given here. The two colours should form as straight and regular a boundary as possible, and the effect of the long white fur drooping over the short and dark is very handsome. In fine, then, the Siberian, whether it be an orthodox breed or the result of a cross, presents in its appearance the points of two breeds, both of which are well known and valuable. The dark points of the Himalayan must be allied to the long wool of the Angora, to make the Siberian what it should be. Any who may like to try the experiment may do so by pairing the different varieties; as may be expected, the product will not be so fine in the wool as the Angora, nor so dark in the points as the Himalayan. By careful breeding, however, and perseverance some very good specimens may ultimately be obtained by the cross, not, however, until the second or third generation.

The Siberian Rabbit is fairly prolific. The litters will be about the average, and the number produced quite sufficient to satisfy reasonable expectation. The doe is very solicitous about the warmth of her offspring, and will make her nest unusually thick, both of hay and wool. In order to facilitate her in the former a good supply of dry hay should be given, and in order to prevent her destroying her appearance she should not be allowed to breed too often. If she has more than four or five litters in the course of the year her beautiful pink breast will be often seen nearly bare.

In disposition the Siberian is very similar to the Angora, although somewhat stronger and more determined. It, however, is certainly much quieter and milder than the hardy Himalayan. Generally quiet, docile, and attached to their keepers is the description they fairly merit.

As an article of commerce the Siberian is not perhaps so valuable as many other varieties. The Angora, for instance, is chiefly valuable for its fur and the Himalayan for its skin, that of the former being clipped and that of the latter being used after death. The result of the cross is not to improve it for either purpose, as it is seldom that the fur is so delicate or fine as in the pure breed; still the breed is very handsome, and the fur frequently valuable.—GEXA.

FEEDING BEES.

LET me remind young apiarists that feeding stocks is an important consideration at this time of the year. Bees are now breeding fast, and brood requires much nourishment. Combs filled with brood are heavy; the creation of brood in hives during unfavourable weather speedily exhausts their stores, and when these are nearly exhausted in such weather the bees decline to set eggs and their combs become empty of brood. Many hives come thus to a state of bankruptcy and remain enfeebled for months. Feeding in time or when necessary prevents this and keeps hives in a healthy prosperous condition. Bees should never feel the touch of hunger, or be tempted to starve and destroy their young.

When breeding commences in spring bees are on the move and require more food than they do during the quiet of winter. A little artificial feeding in spring—even when hives have stores enough—has a beautiful stimulating influence on bees. The weather in this neighbourhood has been unfavourable for outdoor work until the present time; and during the last fortnight we have been giving our hives a very little sugar-and-water to stimulate breeding. Though the bees are not at starvation point in any of the hives, this artificial stimulus is doing them much

good and exciting in hives the hum of prosperity. The expense is but a trifle, and will be returned tenfold when fine weather comes by the increased vigour of the bees.

The mode of giving food to hives in spring is of little importance; every bee-keeper has ways and instruments of his own. One feeds at the top of his hives, another at the bottom; one uses the bottle, another uses the trough. Some hives are made for top-feeding, and some for bottom. We feed with tin troughs from below, and, like other people who consider their mode the best, we consider ours the perfection of simplicity and soundness.

By gentle spring feeding is meant the supply of the daily food of bees: none to be stored away for future use. In autumn it is well to feed bees rapidly and aid them to store away enough for winter use; but in spring it is desirable to let the bees store nothing up but pure honey. All artificial feeding should end as soon as bees find food enough in flowers.—A. PETTIGREW.

DO BEES MAKE OR GATHER HONEY?

THE paper on this subject read before the Missouri Vale Association, which was reproduced in your Journal of March 29th, is very interesting, and deals with the question of honey, what it is, and how it is made, in a very intelligible way, as far as it goes. I say "as far as it goes," for it by no means exhausts the subject or satisfies the mind of the scientific inquirer. I have read the paper very carefully and attentively, and beg to record here the result of my reflection on the facts and data presented to us, presuming, of course, that the statements made therein are facts of which there is no reason to doubt.

Now, first, let me observe it does not appear that the nectar inspected and the honey operated on were "made" in the one case and gathered in the other at the same time of the year; nor that the nectar taken from the flowers was compared with the honey found in the stomachs of bees caught while foraging among the same flowers that were examined. This is obviously a most important matter, for we all know how wide is the difference between honey stored in May and that (call it nectar or honey), which is gathered in July. If the honey and nectar examined and subjected to analysis were not gathered at the same time and from the same flowers nothing is proven in the matter.

Then, again, what does "field honey" mean? This is a new term which requires clear definition. It has no meaning for me. Observe also the enormous proportion of water of which the nectar is said to be composed—as much as 77 per cent. Somehow this is got rid of, as the field honey analysed contained only 8.5 per cent. of water. Doubtless it is evaporated in the interior of the hive, and will go some way to explain the difference between nectar (so called) and honey. But it by no means explains all the difference, for the nectar of over thirty species of plants of twenty-five different families, and which were found to be almost a constant composition, was very different indeed from the field honey that was examined and analysed.

I will reproduce here the comparison as given at page 241 of this volume of the *Journal of Horticulture*.

Nectar is composed of cane sugar (or saccharose) ..	38
" " uncrystallisable sugar ..	10
" " water ..	77
Total ..	100
Field honey—glucose ..	45.10
" uncrystallisable sugar (or melleose) ..	39.40
" water ..	8.50
" mannite ..	1.90
" waxy matter ..	0.60
" nitrogenous and acid matter ..	2.60
Total ..	100.00

There is some error, however, in both those calculations, as the sum totals is not 100, but only 86.40 in the latter, where there has to be accounted for as much as 13.60. The total of the former is 120—that is to say, an excess of 20 per cent. How is this to be explained? Anyhow there is a very marked and noteworthy difference between the nectar and the honey respectively analysed. Assuming (although it is by no means clear), that the nectar and the honey analysed were gathered from the same flowers and at the same period of the year, how is this difference to be accounted for? Mr. Paul L. Viallon, who supplies the paper read before the Missouri Valley Association, jumps at once to the following decision:—"It is natural to come to the conclusion that Bees gather the nectar from the flowers, and that this nectar in the bodies of bees, under the influence of agents not well recognised, undergoes a change and comes out in a state of honey." To this conclusion I very strongly demur. No doubt Mr. Pettigrew is well pleased at this quasi-corroboration, as far as it goes, of his pet theory about honey, although, be it observed, there is nothing said here about "the swallowing and reswallowing" process and its presumed results; but this will not satisfy the inquiries of any scientific mind.

It may very possibly be that some chemical change takes place in the body of the bee before the nectar gathered from

WEEKLY CALENDAR.

Day of Month		Day of Week		MAY 3-9, 1877.		Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	m. s.		
3	61.7	59.9	50.3	4 30	7 24	1 7	5 10	20	3 17	123				
4	62.2	58.4	50.3	4 28	7 25	1 24	9 20	21	3 23	124				
5	62.6	58.9	50.7	4 26	7 27	1 53	10 36	(	3 29	125				
6	62.0	58.6	50.3	4 24	7 29	2 8	11 49	23	3 34	126				
7	58.5	59.3	49.5	4 32	7 30	2 30	1 a 2	24	3 58	127				
8	61.7	59.4	50.5	4 31	7 33	2 31	2 12	25	3 42	128				
9	62.1	59.7	50.9	4 19	7 33	2 41	3 25	26	3 46	129				

From observations taken near London during forty-three years, the average day temperature of the week is 60.3°; and its night temperature 59.1°.

FRUIT-TREE CULTURE.

EXTENSION VERSUS RESTRICTION.



ADVOCATES of the extension system of fruit trees—namely, trees allowed to assume their natural habits, appear to ignore the fact that the restrictive system, or trees confined to a given space by pruning and made to assume various forms, is a necessity of culture rather than a matter of choice with a majority of cultivators. What value is the extension system to the cultivator having only sufficient ground for a few trees as bushes or pyramids?

Everyone has not ground for an orchard in which trees may be grown in their natural form, needing little care nor attention, for all that is needed is to plant and wait, with a certainty that some time fruit in quantity far exceeding that from restricted trees will ensue; but what of the quality? None, I presume, having any idea of the quality of fruit will dispute the general inferiority of fruit produced by trees in an orchard when compared with that borne by trees in highly cultivated ground. The former is usually restricted to the commoner kinds, which may answer general market, and at most in private gardens, culinary purposes; it is from the restricted trees that the finest produce is had, because the trees are in positions—climatic and cultural—more favourable for the production of superior fruit.

The orchard system if exclusively adopted would go far to restrict variety and succession, and in a majority of instances would impair the produce. Instance a Pear or Plum tree against a wall of a cottage or farmhouse, the owners of which have allowed the tree to go wild. Such a tree it is true often produces large crops, but it might as well, for any benefit derived from cultivation or warmth, be in the open as against the wall, and if we take the trouble to examine we may find that the kind is such as does well as a standard in an orchard. Plainly such a tree did not require the shelter of the wall, and it affords no evidence that extension is a necessity of successful cultivation. Suppose the tree were a Pear, say of Aston Town, Green Chisel, Hessel, Swan's Egg, Jargonelle, or some other of the old popular kinds; these do well in orchards, and for such the warmth of the wall is unnecessary, it being a well-known fact that undue artificial warmth is productive of growth—sterility rather than fertility. But then, on the other hand, take Marie Louise, Winter Nelis, or Bergamotte Esperen allowed to grow from a wall at will. What kind of fruit will such trees produce? Not a whit better than that which trees of the same kinds would produce as orchard trees, and as compared with trees restricted to the wall the fruit is not worthy of mention only for its inferior quality and greater quantity.

It is clear if a Pear or a Plum tree afford as fine (which I have not seen) fruit when its branches are allowed to grow unpruned from a wall as when its growth is restricted that the place it occupies is misappropriated, but it proves nothing of the greater advantage of the exten-

sion system over the restrictive. The object of growing trees against walls is to secure fruit superior to what is produced by trees in the open, or for the growth of such kinds as do not succeed in the open ground. I have seen in the open ground fruit of old hardy Pears fully equal to any grown against a wall, but I have never yet seen Marie Louise, Winter Nelis, Bergamotte Esperen, and many more kinds of Pears so fine from unrestricted orchard trees as from trees trained and cultivated against a wall. Though Marie Louise bears well as a standard or pyramid, and when trained to a wood trellis one fruit borne by a tree I have against a south wall is worth in appearance—which goes a long way in fruit—in size and quality half a dozen of the produce of the other trees, Winter Nelis does not produce fruit at all as a standard or pyramid, but does so finely upon a wall with an east aspect. Bergamotte Esperen, one of the best late Pears, gives fruit from a tree against a west wall twice the size of fruit from pyramid trees. Out of fifty kinds of Pears not a dozen could be mentioned affording fruit as fine from standards as is borne by trees restricted to a wall. Some trees, however, submit to restriction better than others, of which may be mentioned Doyenné d'Été, Jargonelle, Beurré Giffard, Beurré d'Amanlis, Williams's Bon Clérier, White Doyenné, Flemish Beauty, Louise Bonne of Jersey, Comte de Lamy, Seckle, Beurré Superfin, General Toddleber, Gratiosi of Jersey, Marie Louise, Hacon's Incomparable, Thompson's, Beurré diel, Passe Colmar, Jules (Léon) d'Airoles (one of the most prolific November and December Pears), Knight's Monarch, Beurré Bachelier, Glou Morcean, Beurré d'Arenberg, Joséphine de Malines, Winter Nelis, Zéphirin Grégoire, Alexandre Bivort, Dana's Hovey (small, but excellent), Bergamotte Esperen, and Passe Crasanne. Many others are amenable to the restrictive system; the only kinds demanding extension are such which from their hardness do not require a wall. But what amateur, or many even who keep gardeners, would care to allow space for a standard tree giving its fruit in October when he can have half a dozen trees in the same space which will afford him variety and a succession of fruit from August to January? Or who would have one trained tree against a wall occupying as much space as is required by half a dozen covering the same space in a sixth of the time? None, I think, if they have tried the two systems. The advantage from the first is all in favour of the restricted trees; they bear throughout the whole of the space, and we obtain a result in seven years from the six trees that is not shown by the one tree in fourteen years. Big trees mean waste of space, loss of time.

I have trees against walls, trees against trellises in the open, pyramids, young and old standards. It is not uncommon in such cases to compare the young trees—their bearing qualities—with the full-sized standards—a comparison indeed of a dwarf with a giant, of the child with the man. Comparisons are considered odious. No doubt they are when facts uproot prejudice. To arrive at facts by fair experiment plant standard trees and at the same time plant pyramids. Treat the standard as a standard,

allow it full extension root and branch, and treat the pyramid as a pyramid—restrict it if need be root and branch. Compare the performances of the two. In no other way can convincing proof be had. Do not plant a pyramid of a kind that requires a wall, and at the same time plant a standard of a kind known to succeed as such, but choose identical kinds, and we may safely await the issue. Our forefathers appropriated wall space by planting of "riders" between the stations of the permanent trees, and Mr. Rivers has shown how to economise space in the open. I find that the trees I planted seven years ago for covering space are not nearly so satisfactory as the upright-trained trees planted between them and restricted. Then I planted trees in an orchard 24 feet and pyramids in the garden at 6 feet apart, and the produce of the latter in any year after the second has equalled that of the former—the one form of tree occupying 4 square yards and the other 64.

These remarks apply only to Apples and Pears producing their fruit upon spurs, very few forming fruit buds upon the current year's growth. The extension system applied to Pears and Apples on the bush or pyramid form is, as far as I have noticed, marked by sterility. We know what form a tree would grow into if left to its own way. No one accustomed to shapely trees would tolerate such objects or the grower of them, for the owners know a handsomely trained tree will produce as fine fruit as an ugly one. I admit pruning may be carried to an extreme. No pruning will bring a very vigorous tree into bearing except root-pruning, and if the latter be not contemplated it is almost useless to plant fruit trees in highly cultivated ground and restrict the growth by pruning. It is all very well, as an excuse for negligent pruning, to point to occasional prodigious crops as produced by the extension-neglect-system, as compared with the restrictive-cultural-system. If better crops and better fruits are had by allowing trees to grow naturally, then we are wrong in our ideas of walls for shelter and warmth, and our pyramids and espaliers are delusions. Why not at once tell us these things are better understood by the cottager who allows his tree to take to itself natural ways, that trees require no pruning beyond that of shears or a saw, and no training beyond a holdfast now and then to maintain a reclining branch from snapping? That fruit trees against the wall of a cottage or farmhouse are sometimes laden with fruit when the trees in private gardens fail I admit, but that it is due to the neglect of pruning and training I deny. The difference arises mainly from the comparatively poor soil in the one case, as compared with that of the heavily-manned fruit border in the other. The same remarks apply to orchard trees; they have a firm soil, its surface is not disturbed, and manure is rarely applied. It is very different with trees upon the restrictive system. They are well manured, and if they do not bear fruit they produce much wood, but when brought into a bearing state by judicious lifting or root-pruning they are as prolific of fruit for their size as the other, and the fruit of the cultivated trees is mostly superior.

Training in the matter of Pears has much to do with the fruitfulness of the trees. Because some observe that the extension parts of the tree are the more fruitful—the part near the stem of the tree and for some distance along the main branches being plentiful in wood but scant of crop—it is concluded that extension is required. Horizontal training has come much into vogue; it is not of a kind calculated to an equalisation of the sap, which traverses horizontal parts much less freely than upright, and this accounts for horizontal-trained trees being most fruitful near the extremity of the branches, and put out so much wood near the stem and upper parts of the trees. The tree wants to be up. In fan-training there is not nearly so much wood produced near the stem, the sap is more regularly diffused, and the vigour of the tree is more equal.—G. ABBEY.

CALANDRINIAS.

As low-growing, densely-flowering, richly-coloured plants for sunny rockeries, few are more suitable than Calandrinias. They are admirable also for window-box and vase decoration, and are pretty when grown in pots for the front row in the greenhouse. *C. umbellata* is, perhaps, the best of them, and this when well grown and flowering under the sun's rays is extremely rich. The flowers are crimson shot with purple, and are so numerous as to quite cover the plant. The plants thrive admirably when planted near the margin of a sunny border, but they do not usually stand the winter except when

partially sheltered and well drained. Plants are readily raised from seed, and flower freely the first year. The seed should be sown as soon as possible in the spring, raising the plants in a heated frame. When large enough they may be pricked-off three in a 60-sized pot, or five in a 48, and be grown near the glass and gradually hardened-off. They will flower during the summer. If the plants which are grown in pots are wintered in a frame or cool greenhouse they will flower early and profusely during the following spring. That is perhaps the most satisfactory way of growing them—keeping them in 48-pots throughout the first summer and winter, then planting them out if required. *C. umbellata* does not grow more than 6 inches high, but *C. discolor* and *C. grandiflora* grow a foot in height. The dwarfier species is the more attractive; indeed it is one of the best of low-growing plants for the purposes named.—AMATEUR, *Matlock*.

ROYAL HORTICULTURAL SOCIETY.

MAY 2ND.

SUMMER SHOW—VISIT OF THE QUEEN.

WHEN it is considered with what readiness the various members of the Royal Family extend their patronage to anything which promotes the national weal—the alacrity with which they countenance objects of benevolence; the willingness they display in fostering art in its various phases; and even their disposition to recognise the national sports and pastimes—it is only natural that the great industry of horticulture, combining as it does art with utility, should have a share of that Royal patronage which is so stimulating in its effects and so powerful in its beneficial influence.

Than horticulture no industry contributes more to the wholesome pleasures of life, and none renders other substantial necessities more enjoyable. Both in the mansions of the rich and the homes of the poor horticulture ministers by its supply, not of vegetables and fruit only, but also of flowers. The extent of the great industry of ornamental plants was fittingly exemplified on this auspicious occasion. Plants for the wealthy were staged in magnificent profusion by those whose reputation for horticultural skill and enterprise have become proverbial, and plants for the million were similarly represented by those connected with the important branch of popular horticulture.

Since the great exhibition commemorative of the appointment of the present Council we have had many admirable displays to notice at South Kensington, but not one so extensive, so varied, and so rich as the expression of loyalty of yesterday—loyalty to horticulture, to the Royal Horticultural Society, and to the Queen.

For a length of time it appeared as if the sun of the Royal Horticultural Society was declining, but lately the prospect has brightened, and week by week and month by month improvement has gone steadily on, support has been increasingly given, confidence has been gradually restored. The policy followed has not been a startling policy but a safe one, and that it has also been sound is sufficiently attested by the results now achieved. The prestige of the Society has been so far restored as to merit the reward of a Royal visit, and the efforts of exhibitors have been such as to render the display worthy of its illustrious patrons. Let us regard the Exhibition in whatever aspect we may—whether in reference to the rarity and value of the plants, their artistic grouping, their superiority of culture, and their immense number—we must describe the Show as the finest that has been seen in London for many years.

An idea of the magnitude of the display may be gathered from the fact that the various groups occupied space and staging averaging about 8 feet in width and fully half a mile in length; and in addition to the plants were fruit (of which the Grapes and Pines were splendid), vegetables, bonquets, and table decorations.

The various collections were arranged in the corridors and conservatory. The products of the Covent Garden growers and vendors, which were remarkable for high quality, occupied the whole of the long eastern corridor, also part of the eastern wing, 100 feet in length; the nurserymen's and amateurs' contributions were displayed in the conservatory and western corridor, occupying about the same extent of space as the "market produce." We will first describe the collection last mentioned as having contributed powerfully, as our continental friends say, "to the splendour of the Exhibition."

ARRIVAL OF THE QUEEN.—Her Majesty arrived at the Exhibition by the Queen's Gate entrance shortly before twelve o'clock. The Royal party, which included Princess Beatrice, the Duchess of Edinburgh, the Duchess of Teck, &c., was conducted round the Exhibition by the President, Lord Aberdare; the Vice-Presidents, Lord Alfred S. Churchill, Col. Trevor Clarke, and Mr.

Henry Webb (the Treasurer); by Dr. Hogg, the Secretary; and the following members of the Council:—Major Mason, Dr. Denny, Messrs. F. Campion, Elwes, W. B. Kellock, and T. C. Clarke, and the principal displays were pointed out and explained by Dr. Hooker of Kew. Her Majesty, and indeed the whole of the Royal visitors, examined carefully almost every collection, expressing their admiration of the plants and fruit. Mr. Ford's (Leonaardale) collection of fruit, &c., was particularly noticed, as was also the excellent contribution of Messrs. Webber. The beautiful collections of market plants had a large share of Royal appreciation, while the splendid contributions of the principal nurserymen and amateurs were subjected to leisurely and critical inspection. Her Majesty was graciously pleased to accept a rich bouquet presented by Mrs. Wills, and one similarly beautiful was provided by Messrs. Veitch, for the Princess Beatrice. Bouquets were also presented to others of the Royal visitors by Miss Smith of Kingsland Road. The Duchess of Edinburgh and the Princess Beatrice also accepted Roses from the collection of Mr. Walker, Thame, Oxon.

WEST CORRIDOR.—Following the order of the Royal procession—from the west to the east—we will note the collections in the order of their arrangement.

Messrs. Carter & Co., seedsmen, &c., of High Holborn, sent a group of foliage plants, principally exotics, comprising *Coccos Weddelliana* and the very graceful-leaved plant *Casuarina sumatrana*. Other Palms, Pandanus, Phoriums, and Dieffenbachias helped to complete a very satisfactory and effective group.

Roses in pots, also out Roses, were sent from Messrs. Paul and Son, "The Old Nurseries," Cheshunt, Herts; the flowers were of remarkable quality. Camille Bernardin, Edienne Levet, Albs Rosea, and Duke of Edinburgh were very striking; also cut flowers of Marfchal Niel of the largest size.

Messrs. W. Cutnach & Son sent the next group, which was composed principally of Cape and New Holland plants. It was tastefully arranged, and the effect of the flowers was toned down by a few Palms judiciously disposed.

A group of Indian Azaleas from R. Thornton, Esq. (A. Retty, gardener), The Hoe, Sydenham Hill, came next in order. There were thirty-one plants, comprising Apollon, a fine white flower flaked with red; Roi des Blancs, white; Bijon de Ledeburgh, with rose-coloured flowers and variegated leaves; Fascination, rose flowers edged with white.

Messrs. Lane & Son, Great Berkhamstead, Herts, sent a collection of hardy Rhododendrons beautifully flowered; they formed a noble and attractive group. Amongst the best may be named Mrs. G. H. W. Henage, deep rose; Fastuosum, fl.-pl., double lilac; Caractacus, deep rose; Correggio, rose, prettily spotted. Pearly, creamy white; Lord John Russell, purple; Theopha Sahib, a very distinct dark flower; and Mrs. J. Clifton, white tinged rose.

We next came to one of the finest groups of hardy flowering and foliage plants that we have seen for many a day. It was from Messrs. J. Veitch & Sons of the Royal Exotic Nursery, King's Road, Chelsea. The group was staged on the ground, and was thus under the eye of the spectator. The background was composed of the Japanese Acers now so much admired; the beautifully cut bronze and light green leaves had a charming effect. The ends of the group were made up of the finest varieties of Ghent Azaleas and the new Japanese varieties of *Azalea mollis*. Towards the centre were some very fine Rhododendrons. We noticed as the best Joseph Whitworth, very dark purple; Broughstonian, rose; Lady Rolle, blue, white, densely spotted; Ornatissimum, a distinct lilac flower, with a white centre; Clarina, very delicate; Ochroleucum; The Queen, fine rosy blue; Madame Wagner, very distinct, white with rose edge; Michael Waterer, a very fine blood red; Baron Oay, a very distinct sort. The group was edged with a row of *Spiraea japonica*.

Messrs. Osborn & Sons, Fulham, sent some very fine Palms and other foliage plants. The group was edged with *Adiantum farleyense* and a few of the finer-foliaged plants. There was also a very fine plant of *Imantophyllum miniatum superbum*.

Mr. John Wills of Onslow Square sent a very well arranged group of what may now be termed the Anerley *Dracenas*. Nearly all of them have been described in our columns, and their fine health and splendid colour reflect great credit on Mr. Wills's manager. The collection comprised over one hundred plants.

Mr. W. Bull of King's Road, Chelsea, sent a group of Cycadaceous plants, comprising some very noble specimens indeed of *Encephalartos cyadifolia*, *Cycas media*, *Dion edule*, *Zamia Roezlii*, *Catakiadomia Hillii*, *Zamia Lindenii*, and *Z. obliqua*. To the two last-named first-class certificates were voted.

Messrs. Croucher & Boller sent a group of Succulents, a portion of them in small pots as they are sold in Covent Garden. There were also many interesting species of Aloes, Echinopses, Mammillarias, Cereuses, Gasterias, &c.

CONSERVATORY.—This structure was attractive even apart from the rich groups of plants exhibited, many fine specimens having been brought from Chiswick, and the vases and baskets had

been redecorated for the occasion. Looking from the western end, the right side of the avenue was occupied with a straight stage from end to end on which the collections were artistically arranged. On the left the exhibits were arranged in semi-circular groups. In the centre of the building was a pyramid of window boxes, exhibited by Mr. Maurice Young of Milford Nursery, Godalming, showing examples of the new art of printing on wood.

At the extreme end of the building Messrs. Charles Lee and Son, Hammersmith, arranged a group of ornamental-foliaged and flowering plants suitable for general decorative purposes. They comprised Palms, *Dracenas*, Heaths, *Boronias*, *Someritas*, *Crotans*, *Agaves*, &c., all fresh, bright, and healthy. The first collection on the principal stage was contributed by Mr. B. S. Williams, Holloway, and it is wonderful to see how his exhibiting power is sustained. His group yesterday was an admirable one, occupying 40 feet in length of staging. The back of the collection was composed of Palms, Tree Ferns, and a fine pyramid of *Azalea amona*. At the front of the tall plants were a collection of *Azalea mollis*, a bright group of twenty *Orchids*; also *Amaryllises*, *Crotans*, *Anturiums*, *Bertolonias*, *Maranta Massangeana*, *Echmeas*, *Sarracenias*, and last but not least a fine specimen of *Gloneria jasminiflora*. For affording pure white trusses of flowers for bouquets we cannot imagine any plant more suitable than this.

The next collection, arranged by Mr. Wills, occupied about 80 feet of staging. The centre of this fine display was a masterpiece of decorative art. It represented a terraced garden, but had none of the usual conventional geometrical beds. The groundwork was composed of *Lycopodium denticulatum*, at the front of which was a drooping fringe of *Isoplepis gracilis*. In the centre and leading to the back of the *Lycopods* and *Orchids* was a mossy path formed with *Lycopodium apodum*. On both sides of the path were single plants of *Coccos Weddelliana*, at the bases of which were groups of small *Gloxinias*; in the corners were larger Palms fringed with *Orchids*, and dotted here and there amongst the *Lycopods* were *Marfchal Niel* Roses and *Stephanotis*. The "garden," which occupied about 100 square feet, was flanked with healthy *Pitcher*-plants, and at the back were displayed framed engravings of the immense glass structure designed to cover the Albert Memorial; and behind the pictures was a splendid *Dicksonia*. The side wings of this central group were composed of a groundwork of *Pelargoniums*, *Anturiums*, *Roses*, &c., out of which sprang boldly large Palms, splendid variegated *Yuccas*, and *Dracenas*, the whole being fringed with *Isoplepis gracilis*. This was a remarkably fine collection, and sustained the fame of the great floral decorator.

The next collection was from the renowned nurseries of the Messrs. Veitch, who have never staged a more brilliant collection. The plants were not large, but on that account the collection was the more attractive, since greater scope for variety was afforded; every plant was in excellent condition, and the whole arrangement displayed consummate taste. At the back were large *Vandas*, *Palms*, and *Crotans*, and in the front the most rare fine-foliaged plants in cultivation, interspersed with *Orchids* and fringed with *Gloxinias*. In the centre of the group was the magnificent *Anturium Scherzerianum Wardii*, and in front of this again a fine pan of the charming *Cypripedium niveum*. Amongst the more striking *Orchids* were *Oncidium fuscatum*, *varicosum*, *papilio Kramerii*, *concolor*, *Crossus*, *sarcodes*, and *Marshallii*; *Odonoglossum Pectostreus purpureum*, very beautiful; *luteo-purpureum*, *citrosum*, *Andersonianum*, *gloriosum*, and *Boeslii*. A charming *Orchid* of great value in this group was *Angrecum citratum* with two long pendulous spikes of creamy *Lobelia*-like flowers. *Masdevallias* were represented by the curious *M. chimera*, *M. Lindenii*, and *M. Veitchiana*. *Cattleyas* by *Mendellii*, *intermedia*, *Skinneri*, and others. There were also many valuable *Cypripediums* and other *Orchids*. *Croton Mortii*, a brilliant and majestic kind, was in fine condition, and the distinct *Earl of Derby* was very conspicuous; *C. Mooreanus*, *C. Macfarrenus*, and *C. Veitchianus* were also in superior colour. *Sarracenas flava*, *major*, and *S. Drummondii* attracted considerable attention, as also did the curious *Atascia cristata*, while the *Gloxinias* were of the first quality. The collection also included *Nepenthes hybrida maculata*, *N. Sedmi*, *N. Hookeriana*, and *N. intermedia*. A magnificent collection.

In fine contrast to Messrs. Veitch's plants were a collection of *Azaleas* from Messrs. Kollinson and Sons, Tooting. The plants were standards on stems from 1 to 3 feet in height, the heads being about the same in diameter. These plants were in robust health and splendidly bloomed. Many of the varieties were semi-double. The finest of the light (nearly white) varieties was *Marie Van Houtte*, and *Souvenir de l'Exposition* was clothed with splendid flowers. Amongst the single dark varieties *Eugène Mazel* was excellent; and amongst the doubles *President Gbelinck* de *Walle* commanded attention; *Madame Iris Lefebvre* was very rich, and *Vicomte de Toreville* was also noticeable. About fifty plants were staged, which produced a very fine effect.

The next collection was an admirable and extensive one from

the nurseries of Mr. C. Turner, Slough. Conspicuous and beautiful in this group were about two hundred *Auriculas*, both show and Alpine varieties, which imparted a pleasing variety to the Exhibition and found a large share of admirers. At the back of the *Auriculas* were *Azaleas* and *Palms*. Mr. Turner also staged about fifty *Roses* grown in 7 and 8 inch pots of the best varieties, the plants being also in capital condition.

At the opposite (the north) side of the building, again commencing at the west end, we found a group of new plants from Mr. S. Williams. Amongst them we noticed *Orobanche* Queen Victoria in excellent colour, *Panax laciniatum*, *Diefenbachia marmorata*, *Aralia filicifolia*, *Acalypha mnesica*, a seedling *Zygopetalum*, &c.

The next semicircular group was staged by Messrs. Veitch. In the centre was the new plant (certificated) *Anthurium Brownii*—a majestic plant with glossy leaves on petioles 6 feet in length; also a basket of the new white *Hydrangea* Thomas Hogg; as were new *Ferns*, *Dracenas*, and *Gloxinias*.

Passing by the plants submitted to the Floral Committee we arrive at a rich collection of *Orchids* from J. G. Heppburn, Esq., Sidecup Place, Kent (Mr. Loveland, gardener). This gentleman usually exhibits *Orchids* in capital condition; on this occasion they were perhaps finer than ever. There were nearly a hundred plants, including the *Odontoglossum* referred to in another page. Space precludes our enumerating all the plants, yet a fine specimen of *Cypripedium candidatum* with twelve flowers must be mentioned. *Saccolabium guttatum*, *Pescatorea cerina*, *Cattleya Mendelli*, *Trichopilia coccinea*, *Warcewiczella discolor*, *Odontoglossum vexillarium* were also conspicuous in this excellent collection.

The next collection, from Sir Trevor Laurence, Bart., Burford Lodge, Reigate (Mr. Spiers, grower), was a grand contribution of *Orchids*. There were about twenty plants, and every one was in splendid condition. *Oncidium Rogerii* had a fine spike of fifty flowers; *Dendrobium barbatulum*, *Cypripedium oadatum* and *C. niveum*, *Cattleya Skinneri* and *C. labiata*, *Odontoglossum triumphans*, and *Epidendrum bicoloratum* were prominent in this group.

Yet another collection of *Orchids* was contributed by W. Terry, Esq. (gardener, Mr. Roberts), Peterborough House, Fulham. The largest plant in this group was *Oncidium altissimum*; and *Cattleya Mendelli* was very fine. Sharing the same stage were half a dozen plants, admirably grown and flowered, from W. Terry, Esq. (Mr. J. W. Miles, gardener), Shirehampton, Bristol, of *Odontoglossum Phalaenopsis* with more than a hundred flowers, *Dendrobium densiflorum*, *Cattleya Skinneri*, *Oncidium macranthum*, *Phalaenopsis Schilleriana*, and *Odontoglossum Pescatorei*.

Messrs. W. & A. Brown, Hendon, exhibited in the conservatory some new sorts of decorative *Pelargoniums*. Mr. Atkins, gardener to Col. Lloyd Lindsay, Lockings, Wantage, exhibited a fine specimen of *Clerodendron Balfourianum* on a globe trellis of 3 feet in diameter, and a good plant of *Cocos Weddelliana*.

In the eastern wing of the conservatory we first noted some *Fern* cases, &c., exhibited by Messrs. Dick Radclyffe & Co. and Mr. James Bramwich. Next was a collection of plants staged by Messrs. Standish & Co. of Ascot, which comprised good specimens of *Adiantum farleyense* and *A. gracillimum*, well-bloomed *Azaleas* and *Cinerarias*; the whole collection backed with *Adiantum gracillimum*, which had a most charming effect. The next group consisted of *Silver Tricolor* and *Golden Variegated Pelargoniums*, among the former were *Ilalis* variety, Miss Turner, and *Madame Patti*; in the *Golden Tricolors* were fine-grown plants of *Miss Turner* and *Comtesse Tyronnel*. This collection made a very pretty change, and was exhibited by Mr. Coppin, Croydon. Messrs. Laing & Co., Forest Hill, exhibited a very large collection of miscellaneous plants. There was a conspicuous plant of *Pandanus Veitchii*, *Palms*, *Azaleas*, *Rhododendrons*, *Caladiums*, *Dracenas*, and *Ferns*, all in perfect health. Next was a collection of eighteen well-grown *Gloxinias* with well-coloured flowers, interspersed with *Adiantum peruvianum* and the curious *Reidia glaucescens*. These were sent by Mr. Kinghorn of Richmond. Mr. James, gardener to F. Watson, Esq., Isleworth, sent a collection of *Cyclamens*, *Cinerarias*, and *Calcarias* in his usual excellent selection of quality. A splendid group of *Azaleas* was sent by Messrs. F. & A. Smith of Dulwich. A capital lot of *Palms*, *Crotons*, *Ixoras*, *Ferns*, *Aralia Veitchii*, and several other plants came from Mr. John Ley, Royal Nursery, Croydon. Next came Mr. Miles' new Hybrid *Mignonette*, remarkably large and very fragrant, exhibited by Messrs. Brook & Gallop, Western Road Brighton. Following these was a large collection of spring flowers from Mr. R. Dean; also a group of *Polyanthuses*, staged by Mr. Parr, gardener, Harrow Weald Park.

Mr. J. Aldons, Gloucester Road, Kensington, staged a group of *Ferns*, principally *Pteris*, in excellent health. These were intermixed with *Dracena Cooperii* and others, and were very pretty. Messrs. C. Lee & Son sent a group of their pretty decorative plant *Cornus mascula areo-argentissima*. Messrs. Jackson & Son of Woking came out well with a lot of *Clematites*, remarkable for their fine large flowers. A splendid group of

foliated plants and some grand *Orchids* were staged by Mr. E. Ayling, gardener to S. Cumings, Esq., Highgate, and commanded a large share of attention. Two boxes of fine *Roses*, one of *Maréchal Niel* and the other mixed kinds, were shown by Mr. J. Walker, Thame, Oxon. Mr. W. Rosey, gardener to C. Mortimer, Esq., Wigmore Hill, Dorking, sent good *Cinerarias*, *Ferns*, and *Dracenas*. An excellent collection of hardy plants was exhibited by W. Terry, Esq., Peterborough House, Fulham. A collection of seedling *Polyanthuses* in pots was staged by Mr. Cardwell, Wallingford Street, Wantage. Messrs. Barr & Sugden of King Street, Covent Garden, staged probably the finest and largest collection of cut *Cinerarias* ever seen at Kensington; they were all named, and small plants of *Pteris longifolia* mixed with them showed the flowers to great advantage. They were deservedly admired. The same firm also exhibited *Fern* cases, *Baskets*, &c., all filled with plants.

EAST CORRIDOR.—The growers and salesmen of Covent Garden produce exhibited on this occasion again in large numbers, and their respective collections taken as a whole were most excellent. We will take them seriatim, commencing on the left-hand side of the corridor with a very beautiful and artistically arranged group from Mr. Wright, Lee, Kent, consisting principally of *Palms* and *Orchids*, with a few *Crotons* and *Dracenas* interspersed, the whole edged with *Lycopodium denticulatum*. This was a very rich collection from the many well-grown plants of *Odontoglossum Alexandrae*, *Phalaenopsis*, and *Dendrobiums*.

A collection nearly 100 feet in length was exhibited by Mr. T. C. Paget, Royal Nurseries, Clapham, S.W., containing upwards of six hundred plants, all well-grown examples, of *Spiraea (Hofia) japonica*, *Corypha australis*; *Dracena rubra*, *congesta*, *gracilis*, *Gulfoylei*, *terminalis*, *stricta*, and *hybrida*; *Adiantum uncinatum*, *gracillimum*, and *scutum*; *Pteris argyrea*, *serrulata* and *serrulata cristata*, &c.

A well-grown group of *Pelargoniums* was contributed by Mr. G. Baird, Winchmore Hill, and consisted of *Scarlet Gem* and other well-known sorts grown for market purposes, together with about fifty plants of the *Duchess of Edinburgh Pelargonium*, a very pleasing flower. These plants were in small 48-pots, dwarf, bushy, and compact, having from a dozen to fifteen fine trusses on each.

Mr. H. B. Smith, Ealing Dean Nursery, Ealing, W., exhibited a collection of *Palms*, *Dracenas*, *Crotons*, *Ficus elastica*, edged with small plants of *Dasylirion Mooreana*, *Adiantum farleyense*, *gracillimum*, and others. This was a very bold and effective group. As a continuation of Mr. Smith's group there were well-grown market plants of *Huteia japonica*, *Euchisia Arabella*, admirably bloomed *Tricolor* and other variegated *Geraniums*, arranged in masses of each kind.

Mr. Puttick, a well-known Covent Garden grower, exhibited admirable examples of *Hydrangeas*, *Mignonette*, *Stooks*, *Colouses*, *Heliotropes*, *Richardias*, and *double and single Geraniums*.

The collection of Messrs. J. & J. Hayes, florists, Edmonton, consisted of *Fuchsias*, a *double-flowering Pelargonium*, *Hydrangeas*, *Azaleas*, *Erica verticillata* and *Cavendishii*, *scarlet Geranium*, *Fairy Roses* and *Ferns*, the whole artistically arranged in panels. Mr. Hayes also contributed about a hundred plants of *Cinerarias*, very compact in growth, distinct in colour, and admirably grown. The whole formed one of the largest collections and was much admired.

Messrs. J. Pounce & Sons of Hendon, N.W., exhibited rustic baskets, *Wardian cases*, *aquariums*, &c., also a grand collection tastefully arranged of useful furnishing plants; conspicuous among them were large-flowering and fancy *Pelargoniums*, also three boxes of blooms of the above, representing three dozen varieties.

The most extensive and effective collection of *Pelargoniums* was contributed by Messrs. G. Beckwith & Sons, Tottenham. This was indeed a grand lot, and could not have contained less than seven hundred plants, principally grown in 48's, a dome of flowers being formed in the centre with half-specimen plants of their new decorative *Pelargonium* *Duchess of Bedford*, and also the centre row of the collection consisted wholly of this variety, of which quite one hundred plants were exhibited.

Messrs. Hawkins & Bennett, Lily Gardens, Twickenham, exhibited about six hundred named plants, principally of *Geraniums* *Madame Vacher* (white), *Dr. Lindley* and *Versutus* (red), and *Christine* (pink). They were displayed in half-circles—an effective mode of arrangement where there are only three colours. A few *Adiantum* in the centre and *Isolepis gracilis* and *Lycopodium* faced the group, and its beauty was further enhanced by about sixty bunches of cut blooms of the popular *Geranium* named.

Messrs. Reeves, Acton, also contributed a fine bank, as well as an excellent group, comprising tall *Richardias*, *Palms*, and standard *Guelder Ruses* for a background; panels of *Hydrangeas*, *Pelargoniums*, *Fuchsias*, *Gardenias*, *Heliotropes*, *Lily of the Valley*, &c., lines of *Ferns*, *Selaginella Martensii*, *Spiraea*, &c. The same exhibitor set up one thousand pots of Reeves' *Giant Mignonette*, a large and sweetly scented variety. Groups of

Pelargoniums, Cinerarias, Fuchsias, double Petunias, and Scarlet Geraniums were contributed by Mr. J. Seabrook, Ponder's End, Enfield.

A very pretty group was staged by Mr. James Sweet, Leighton, in lines or belts, the back being formed with *Erica persoluta* alba, followed with Pelargonium Triomphe de St. Mandé, Cytisuses, a row of *Erica colorans*, and Pelargonium Rob Roy, edged with a dwarf and compact Fuchsia. A first-class certificate was awarded to a fine raised bank of Empress of India Pelargonium in this collection.

Messrs. Poulton, Fountain Nursery, Angel Road, Edmonton, staged an admirable group of Spiræas, interspersed with Petunias, Tropæolums, Roses, Geraniums, and Calceolarias.

Mr. Thomas Peatridge, Brentford, sent several boxes of Tricolor and Bronze Geraniums in very small plants.

Mr. G. Sawyer, Edmonton, arranged a collection in squares of Calceolarias, Deutzias, Lily of the Valley, Pelargoniums, Fuchsias, and Spiræas; and in the collection staged by Mr. T. Pearce there were grand plants of *Erica verticosa* and other well-flowered Heaths, Fuchsias, and dwarf Roses; Mr. Ladds of Bexley Heath contributing Geraniums of sorts and Spiræas.

TABLE DECORATIONS AND BOUQUETS.—Of the bouquets, Her Majesty and the Princesses admired the eight bouquets exhibited by Mr. W. J. Smith of the Floral Hall, Kingsland; the Duchesses of Edinburgh and the Princess Beatrice were graciously pleased to accept two of these. The bouquets were not as large as some, and were much admired.

A basket of cut flowers, two bouquets, and a cross composed of white Gardenias, Azaleas, Bouvardias, and Ferns, were contributed by Messrs. Green & Co., Victoria Street, S.W. The bride's bouquet in this collection was very rich and light though large. Messrs. Chas. Wood & Son also contributed bouquets, wreaths, crosses, &c., the whole of them very fine.

Mr. J. Aldons, Gloucester Gate, South Kensington, sent a drawing-room bouquet and bridal bouquet, which were very much admired. Mr. C. W. Buck, Central Avenue, Covent Garden, also contributed three elegant bouquets; and from Mr. James Bromwich came bouquets, baskets of flowers, wreaths for the hair, crosses, and button-hole bouquets. Messrs. Pounce and Sons sent ballroom and wedding bouquets, but somewhat large; and from Mr. A. Barnes also came two bouquets. Mr. A. Mott, 15, St. Leonard's Place, sent two bouquets, one composed principally of Roses, which were very pleasing at this season of the year. Mr. G. Strudwick, 20, Baywater Terrace, sent three bouquets and a centre stand for the dinner table, tastefully arranged. A wreath of Gardenias, Azaleas, Bouvardias, Spiræas, and Ferns, with a bridal and ball bouquet, came from Mr. S. Moysse, Belgavia; the bouquets were very choice, but very heavy; and from Walter Wood, Parnley & Co., came bouquets, crosses, *boutonnieres*, ladies' dress flowers, and birthday gifts, the whole of them very interesting and pretty, and found numerous admirers. Thirty-seven bouquets were exhibited.

The table decorations consisted of eight tables, arranged by the following exhibitors:—Mr. S. Young, 86, Park Street, Camden Town; Mr. A. Chancellor, The Retreat, Richmond; Mr. C. Burley, The Nursery, Brentwood; Mr. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton; Messrs. Wood, Parnley & Co., 19, Park Street, Knightsbridge; Chas. Wood & Sons, 21, High Street, Manchester Square; and Mr. Aldons, florist, Gloucester Road. Mr. Burley's and Mr. J. Aldons's tables appeared to be especially admired by the visitors. A very massive and richly furnished table with everything complete was laid out by Messrs. Pounce & Sons, 153, Queen's Road, Baywater, but it was very much overdone. Some very fine Fansies were exhibited by Mr. Hooper, Bath, and were much admired.

FRUIT.—A fine collection was sent by Messrs. Webber & Sons of Covent Garden, consisting of twenty-two splendid Pine Apples from St. Michael's, three baskets of grand English-grown Muscat Grapes, Sir Charles Napier Strawberries, Léon Leclerc de Laval Pears, English Apples and Filberts, also a fine basket of Maréchal Niel Rose.

A dozen capital Cucumbers were sent by Mr. C. Mott, Potters Bar; and from Gurnsey Mr. J. Watson exhibited two bunches each of Black Hamburg and Muscat of Alexandria Grapes; and Mr. W. Earley sent a collection of Grapes and Apples, the Apples very sound and firm for the season. Mr. Ford of Leonardlee, Horsham, put up a stand of Maréchal Niel Rose, also twenty dishes of Apples remarkably well kept, also a collection of new Potatoes and other vegetables.

VEGETABLES.—Vegetables were exhibited by Mr. W. Poupert, Twickenham, as well as several boxes of cut flowers done up in bunches, as is customary when sending to Covent Garden. Mr. Poupert of Mortlake also staged a fine collection of vegetables, including excellent examples of Seakale and Asparagus.

From Mr. Walker, nurseryman, Thame, Oxford, came a box of Mushrooms in clumps as growing; and from Mr. J. Smith, Kingsland Road, came two excellent baskets, one of salad from France the other the produce of England. From Mr. W.

Stephens, gardener to Sir John Brown, Endcliffe Hall, Sheffield, came a very fine seedling Rhubarb of excellent colour all through.

Gold medals were awarded as follows:—Two to Messrs. Veitch & Sons, two to Mr. J. Wills, and one each to Mr. B. S. Williams, Mr. W. Bull, and Barr & Sugden. Silver-gilt medals to Messrs. Chapman, Ley, C. Turner, Osborne, Lane & Son, Burley, Hayer, Webber, Reeves, and Bromwich. Large silver medals to Messrs. Outbush, Paul & Sons, Thornton (Ratley, gardener), and Beckwith. Silver medals to Messrs. Ford, Standish, Lee, Laing, Burley, Pounce, Aldons; Wood, Parnley, and Co.; Wright, Paget, Smith, Hawkins, Reeves, Buck, Seabrook, and Sweet. Bronze medals to Messrs. Carter & Co., Deau, Terry (Roberts, gardener), Cumings (Ayling, gardener), Hudson, Young, Puttick, Baird, Pounce, Wood, Strudwick, Stone, Paulton, Sawyer, Pearce, Ladds, Poupert, and Miles (Perry, gardener). Cultural and other commendations were awarded to several exhibitors, whom we are unable to enumerate. Her Grace the Duchess of Bedford presented the medals which were awarded at the last Show to the Covent Garden exhibitors.

Garden implements were exhibited by Messrs. Thomas Green and Sons, 54 and 55, Blackfriars Road; E. & E. Horley, Tooting; Bede; John Matthews, Weston-super-Mare; Fletcher, Lowdres, & Co., 13, Great George Street, Westminster; Waite, Burnell, Huggins & Co., 223, Upper Thames Street, E.C.; J. C. Fox, South Kensington; and Read & Co., 85, Regent Circus.

We have said that the Exhibition was the finest that has been seen in London for many years; but we may go further and say, that considering the nature of the collections—the number of the plants and their quality, also that no prizes were offered—the Exhibition was the most remarkable that has ever been seen in England, and probably anywhere else. Thanks also to its being held at a time when no other exhibition divided the offerings of the exhibitors and the patronage of the public, the Show was not only complete, but vast crowds of visitors flowed through the arcades throughout the day. We are justified, therefore, in pronouncing the Show in every respect a splendid success.

To Mr. Barton, the Superintendent of the Gardens, and his assistants, and to Mr. Howard for his aid in organising the market collections, a meed of praise is due for their services in connection with the arrangements of the Exhibition.

FRUIT COMMITTEE.—John Lee, Esq., in the chair. A basket of Peas (McLean's Little Gem) was exhibited by Mr. Jas. Batters, gardener to Mrs. Willis Fleming, Chilworth Manor, Romsey, Hampshire. They had been grown in pots placed on the shelves of a cool house; they were certainly very creditable examples, and the Committee unanimously awarded a cultural commendation. Mr. W. Cox, The Gardens, Madresfield Court, Great Malvern, sent a dish of fine Citrons, to which a vote of thanks was given. Mr. C. Haycock, gardener to C. Leigh, Esq., Barham Court, Maidstone, sent some excellent Strawberries, Cherries, and a brace of Cucumbers. A letter of thanks was to be sent to the exhibitor. Mr. W. Hinds, gardener to Sir T. E. Moss, Bart., Otterspool, Liverpool, sent a dish of Strawberry Oscar, bright in colour and of large size. A cultural commendation was awarded. Mr. R. Price, Cookham, sent a dish of Sir Joseph Paxton Strawberry, and was also awarded a cultural commendation. Mr. W. Wildsmith, gardener to Viscount Eversley, Kewfield Place, Winchfield, sent a very fine dish of Auguste Nicotise Strawberry of large size, and a similar award was made. Mr. J. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, also sent Strawberry President. A letter of thanks was voted for them.

Mr. Ollerhead, gardener to Sir H. Peek, Bart., Wimbledon House, sent a dish of Bananas (*Musa Cavendishii*). The specimens were of large size and most excellent quality, and a cultural commendation was unanimously awarded.

Mr. G. S. Miles, gardener to Lord Carington, sent three Jamaica Pine Apples and one Melon, to which a cultural commendation was awarded.

Two heads of Variegated Broccoli were also sent by Mr. W. Horley, Tooting, Beds. The variegated leaves were very pretty.

A cultural commendation was also voted to Mr. P. Edwards, gardener to Mrs. Trisbram Footley, Liphook, Hants, for a very good dish of Black Hamburg Grapes.

Mr. W. Gardiner, The Gardens, Eatington Park, Stratford-on-Avon, sent six dishes of Apples, to which a letter of thanks was voted. A splendid branch of Cherries came from Mr. Stevens, Trencham Gardens.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. First-class certificates were awarded to Messrs. Veitch & Sons for *Lomaria discolor bipinnatifida* (distinct, with pleasing light green fronds), *Anthurium Brownii*, and *Colera multicolor* (with deeply-out foliage of the same colour as *Verschaffeltii splendens*); to Mr. Wills for *Drazena* Mrs. Baure; Mr. Turner for *Auricula Sarah*, dark self, plum colour tinged with purple; and for *Alpine Auricula John Ball*, maroon sad orange, very rich; Mr. Cro-

Kellock for *Agave schidigera* princeps, a striking plant; Mr. Bull for *Zamia Lindeni*, also for *Z. Reezii* and *Z. obliqua*; Mr. Sweet, Leighton, for *Pelargonium Empress of India*; Messrs. Paul & Son, Cheshunt, for *Rose Emily Laxton*, vigorous plant, fine flower with cupped petals, colour rosy salmon; to Mr. B. S. Williams for *Aralia filicifolia*, highly distinct and elegant, and *Adiantum Williamsii*, a great acquisition in the way of cuneatum, but perfectly distinct; to Mr. James, Redless, for *Cineraria Mrs. Beck*, massive flower, purplish maroon; to Mr. Douglas for *Alpine Auricularia Prince*, also to Florence, a magnificent flower, which will carry Mr. Douglas's name to posterity. Mr. Moore, gardener to B. C. Pickett, Esq., Blindon Hall, exhibited a remarkably fine specimen of *Dendrobium densiflorum* with over twenty fine racemes of flowers, and was awarded a cultural commendation. A fine plant of *Calogyne cristata* was exhibited by Mr. Stevens, Trentham Gardens; the plant was 4 feet in diameter, and laden with flowers.

NOTES AND GLEANINGS.

SINCE unwarrantable insinuations, imputing duplicity to the gentlemen who signed the MEMORIAL to the Council of the Royal Horticultural Society for the alteration of the days of meeting, have been published, we have thought it advisable to make known the names of those memorialists, so that the public may judge for themselves whether they are capable of doing that which has been ascribed to them. These gentlemen are so well known for honourable and straightforward conduct that we should have thought their names were sufficient to protect them from such an imputation that they said one thing and meant another. The following are the names attached to the memorial in question:—*Jas. Veitch & Sons, Chelsea*; *Jas. Douglas, Loxford Hall Gardens*; *Manrice Young, Milford*; *Charles Noble, Bagshot*; *Robert Parker, Tooting*; *James George, Putney Heath*; *Geo. Thos. Miles, Wycombe Abbey Gardens*; *W. Wildemith, Heckfield Gardens*; *John Standish & Co., Ascot*; *Henry Bennett, Stapleford*; *John Wills, Kensington*; *Henry J. Wimsell, Chelsea*; *John Woodbridge, Syon House Gardens*; *Jas. Cutbush, Higgate*; *Geo. Sage, Ashbridge Gardens*; *H. Lane & Son, Great Berkhamstead*; *John Lee, Hammersmith*; *F. R. Kinghorn, Sheen Nursery*; *J. James, Isleworth*; *John Fraser, Lea Bridge*. Mr. Bull, who is only an occasional exhibitor, did not sign for private reasons, but stated that he would not offer any opposition to the change; and Mr. B. S. Williams had not an opportunity of signing, but afterwards expressed in strong terms his approval of the change and his disapproval of the absurdity that has too long existed of the exhibitions of the Royal Horticultural and Royal Botanic Societies occurring on the same days. The mere catching at accidental circumstances by way of proving the judgment of the memorialists erroneous is no answer to so powerful an argument as they urge, and anonymous criticism of such a question merely indicates how very feeble the opposition to it is.

— We note from the schedule of the CRYSTAL PALACE EXHIBITIONS that third prizes are abolished, the effect of which will in all probability be to reduce the number of exhibitors. The first show (of plants and flowers), is to be held on May 12th. The principal prizes offered are £15 and £10 for twelve stove and greenhouse plants (nurserymen), and the same amounts for nine plants (amateurs). Prizes of £10 and £7 are also offered to nurserymen and amateurs for Orchids, and £12 and £8 for nine greenhouse Azaleas (open). But the greatest amounts of all are £20 and £15 for nine roses in pots (nurserymen). The Rose Show (one day only), is announced for June 23rd, when no third prizes are provided, but the first and second prizes are liberal. In the classes for table decorations third prizes are not withheld.

— THE WIMBLEDON AND DISTRICT ROYAL HORTICULTURAL AND COTTAGE GARDEN SOCIETY have submitted their schedule of prizes. The Show is to be held in the grounds of Mrs. Evans, Park House, Wimbledon, on July 5th. Several special prizes are offered, and the executive hope to be able to receive support enabling them to provide for a group of open classes by way of rendering the exhibition additionally attractive. The Show last year was an excellent one, and the Society is worthy of the support of the affluent residents of the district.

— At the NATIONAL AURICULA SHOW which was held at Manchester on the 27th ult. the Rev. F. D. Horner secured nearly all the first prizes; Mr. B. Simonite, Mr. Barlow, Mr. Cooper, &c., were also successful exhibitors, Mr. Barlow being awarded a silver medal for an extensive miscellaneous collec-

tion. At the exhibition of stove and greenhouse plants, which was held at the same time, the gold medal was awarded to Mr. Broome of Didabury. First-class certificates were awarded to Mr. Leeseh, Fallowfield, for *Epidendrum Frederick William*; to Col. Jago, Birkenhead, for a new *Zygopetalon*; to Mr. Davis, Ormskirk, for a new hybrid *Rhododendron*; and to Mr. Harrison, Leicester, for *Mimulus moschatatus Harrisonii*. Several cultural certificates and commendations were also awarded. The combined Exhibition was a successful one.

— The first prize for the best nine AURICULAS at the spring Exhibition of the Royal Horticultural Society of Ireland was taken by the Rev. F. Tymons with splendid flowers of Superb, Turner's O. J. Perry, and Finlayson's Sir R. Peel; Mr. Leland coming next in merit with a first-rate collection. In the class of six the last-named exhibitor took first place, his lot comprising very fine flowers of Barker's Nonsuch and Headly's Royal Purple; and in Mr. Tymons' lot, which was next in merit, Metropolitan and Sir W. Peel were the most noticeable flowers. The Exhibition is described by the *Farmers' Gazette* as having been a very good one, and was visited by the Lord Lieutenant and suite.

— A "SUBURBAN GARDENER" writes to us as follows on the LATE PLANTING OF TULIPS:—"Towards the close of January I read in the Journal that Tulips then remaining in paper bags, owing to the continuous rains of the autumn and winter months, might yet be planted with a fair prospect of their thriving. At that time a small portion of my bulbs had been planted, the remainder being regarded as wasted, or, at least, comparatively worthless. I, however, planted them according to instructions (it was then early in February), covering them only an inch deep with leaf soil. The present condition of the beds now is, that those bulbs planted 4 inches deep in November are flowering, but the plants are irregular, the foliage ragged, and the flowers malformed; while those planted in February are level in growth, have ample and healthy foliage, and fine flowers are expanding. They are a week later than the autumn-planted bulbs, but in condition are very far superior to them."

— MANY of the species of PRIMULAS are extremely beautiful during the spring months. One very distinct is *P. verticillata*. This species has very bright primrose-coloured flowers produced in whorls, and the foliage and flower stems are slightly mealy. Not the least advantage relative to this *Primula* is its property of coming quite true from seed. This *Primula* is of very easy culture, a frame free from frost or a greenhouse being only required to preserve the plants during the winter. They flower profusely in the early days of spring, and produce a pleasing effect in various modes of grouping.

— A "KITCHEN GARDENER" writes: "I quite agree with all your correspondents who say the BULLFINCH is destructive in the garden. I do not know of another bird, neither large nor small, that will do so much mischief. They have put me in a worse temper this spring than even the bad wet weather. They not only eat the buds of every kind of fruit tree, but when they can eat no more they continue picking them off and letting them fall to the ground. I have seen a single bird make the ground as green as the lawn underneath Plum trees and Currant bushes in less than an hour. If they are frightened from one tree they only go to another. The only cure for them is to kill old and young without mercy."

— A WELL-KNOWN and successful grower of Grapes informs us that MRS. PINCE'S BLACK MUSCAT flourishes much better on the long-rod than the short-spur system of pruning. We have frequently heard the same remark made by lesser cultivators who grew this Grape very well when the Vines were in a young state; but by yearly spurring the bunches became smaller and the Grapes did not sustain their former excellence. As this is the period for training-in young rods the matter may be seasonably alluded to. In the meantime further information on the point would be acceptable to many readers.

— "AN OLD STRECHER" writing to us on HEDGEHOGS AND TOMTITS, states: "The popular error there alluded to by 'A MASTER GARDENER' respecting hedgehogs and crows, arises mainly from the fact that in early morning and at dusk the hedgehogs are often seen running round crows which are lying down. I have seen them, but they were always engaged in catching insects disturbed by the cow; they might also be attracted by her warmth. As regards tomtits, of which lovely little birds I am a warm admirer, I regret to say that while they eat insects they also eat Peas. About a dozen of these

birds last autumn cleared every Pea out of the pods of a late row. The mischief was done before the Peas were ready to gather, being only the size of small shot. The gardener knowing my objection to having any birds shot, told me of my favourites' misdeeds, and gave me ocular proof of the correctness of his statement. Ten tomtits were shot, and we soon had plenty of Peas. They perforated the pods most cleverly close along the top line. I much regret to record this against them."

— Mr. CHARLES DOWNING, the eminent American fruit-grower, writes as follows on WASHING FRUIT TREES:—"Why use lime for the trunks and large branches of trees? It has an unnatural and unseemly appearance, while soft soap leaves the bark smooth and of a natural colour, and my experience is that it is more effectual. Potash is equally good. Dissolve each pound in a gallon and a half of water; put it on with a stiff brush, and when not in use the brush should be kept in water. The person using it should be careful not to get the potash on his hands and clothes. Soft soap should be put on as thick as it can be used. Any rough bark should be scraped off before washing the trees, and when washed annually no rough bark and moss will appear."

RENOVATING MARECHAL NIEL ROSE.

WE received a letter last week describing an instance of a favourite *Marechal Niel* Rose cankered above the ground, and this week we have received a specimen of the canker. This we submitted to a practical gardener, who in reply has described a case of canker which occurred with a *Marechal Niel* Rose belonging to C. E. Baring, Esq., at Coombe Cottage, Kingston-on-Thames, and which the gardener, Mr. Baker, cured. As the remedy applied by Mr. Baker was so simple and effectual, it is worthy of record.

"Mr. Baring's Rose," writes our informant, "is growing under glass, and is trained to the back wall of a lean-to house. A little distance above ground the stem cankered extensively, the foliage of the Rose lost its colour, and the plant appeared to be in a dying state. Instead, however, of leaving it to its fate Mr. Baker tried an experiment which has answered admirably. It was clear that the roots of the Rose were unable to supply sap to the parts above the canker, and the idea occurred to induce the emission of a new set of roots from and above the cankered portions of the stem. To effect this some stout boards were affixed on edge about a foot from the wall and a foot or more high, forming a box or trough. This was filled with rich soil—loam and cow dung, the compost being packed closely round the cankered part. The soil was kept moist, and new roots commenced forming at once, and in a short time the trough was quite filled with them, and new vigour was imparted to the Rose. The trough was then lengthened and the soil below it was enriched; into this narrow bottomless box some of the shoots which were taken from the wall were pegged; these also emitted roots, and the growth of the Rose has since been wonderful. New shoots as thick as a walking-stick have been produced and have quite covered the wall, and many dozens of grand blooms have this spring been cut from the Rose which a year previously was thought to be dying. It is now more vigorous than ever, and will no doubt produce many harvests of golden flowers."

"This account may be useful to 'T. ROSE.' The example he has sent does not appear to be canker as ordinarily understood, but injury has been done by the stem having been rubbed against a hard surface. Let him carry out the practice above described as near as he can. If the injured parts are too high to be covered with soil, I advise an application of rich soil and liquid manure to the roots, and not until this has failed to improve the Rose would I dig it up. If, however, it is beyond recovery I should replace it with a young plant cleanly worked on a healthy Briar stock, the stem of the Briar reaching to the glass, through which the branches can be trained. The Briar stem should be protected with a hayband or other covering during severe weather.—W."

LIQUID MANURE FOR FERNS.

As you solicit the experience of your readers on this subject I venture to offer you mine. Some time ago I had charge of a garden where there was small accommodation for the growth of Ferns, the principal place at disposal for their culture being a low shelf attached to the back wall of a Pine stove. This shelf was probably some 5 feet from the glass and about 3 feet

below another shelf, which was used for forcing French Beans and Strawberries. It was my practice to water the Beans and Strawberries on the upper shelf every other day with strong liquid manure made from guano, soot, and sheep or cow dung; and what ran over or ran through the pots above descended to the Ferns and kept them in a state of saturation, so much so that it was very seldom necessary to water them in the regular way. Under this treatment they grew most luxuriantly, and threw up fronds of noble proportions and of excellent colour.

These Ferns were grown without a particle of peat, the compost used consisting of about equal portions of moderate loam and leaf soil, with a liberal admixture of silver sand and (what I consider a beneficial ingredient) decayed wood, commonly known as touchwood, rubbed fine through a half-inch sieve. The Ferns grown under these conditions were chiefly *Adiantum cuneatum*, *A. formosum*, *A. farleyense*, *Pteris serrulata*, *P. cretica* *albo-lineata*, and *P. argyrea*.

These Ferns being in a Pine stove were subjected to a brisk temperature, but I have found Ferns succeed equally well with liquid manure in a low temperature. As an instance, I have here at the back of a lean-to greenhouse a narrow border in which Vines are planted, and to hide the unsightliness of the soil Ferns are placed upon the border, and the pots are surrounded with stones so as to form a miniature rockery. On several occasions last season I gave this border soakings of liquid manure, pouring it over the Ferns and soaking them also; and about a fortnight ago I repeated the application of liquid manure just when the Ferns were throwing up numbers of young fronds, without any detriment to them, but from all appearance greatly to their advantage.—A. E., *Heanton Satchville*.

SHELVES FOR STRAWBERRY FORCING.

To lessen the labour of watering, and to save the roots of the Strawberries as much as possible from the scorching sun, the ordinary shelves generally met with are not calculated to give the most satisfactory results. We give mulching to the plants which are to fruit in the open ground; but in houses, pots (which are a faint imitation of nature at best) are by some placed high and dry, and very often the labour power employed to meet their wants is very inadequate. Standing the plants in their pots on turves is a good old plan, but when they have to be moved to cooler and drier structures—a practice necessary to secure flavour—it is not easy removing the turves intact with the roots which may have come through the holes of the pots. A layer of moss placed along the shelves answers well when the pots are stood on it. The roots run freely into the moss, and will lift the whole mass without any danger of breaking the fibres. When the pots are placed into others a size larger, with soil or moss packed round them, it answers well as an aid to nutriment and for protection from the sun.

But it has been long a favourite system of mine to have shelves with a board in front to shield the pots from the sun, and made watertight so that the drip may not come down about the person employed to water the plants; and this also saves the back wall from the wetting which it often receives at inopportune times. Plugs placed at the ends of the shelves to be taken out at pleasure add to the convenience. I have often used these angular shelves with success for French Bean forcing in pots. When the position formerly was intensely scorching, and a complete nursery for red spider, a quantity of half-rotten leaf soil or moss placed under the pots, and occasionally dusted lightly with soot or moistened with soot-water, was generally found to be a specific against red spider. It is seldom (except by market-growers) that separate pits or houses are employed for forcing Strawberries, hence the difficulties which arise from vermin and other impediments. How simple a matter Strawberry forcing is where structures are employed with numerous compartments, so that abundance of dry fresh air can be given to those ripening, a closer and moister atmosphere to the fruit swelling, and where those which are setting can have proper treatment!—M. T. (in *The Gardener*).

ODONTOGLOSSUM ROEZLII.

Not only are the *Odontoglossums* amongst the most beautiful of Orchids, but they are easy of culture, and produce their striking flowers freely even when the plants are in a small state. For the cultivation of this genus a specially constructed and heated Orchid house is not by any means indispensable,

but, on the contrary, an intermediate house during the winter where a temperature of about 50° can be maintained, and ainery during the summer afforded (structurally) are all that is really necessary for these plants. After the rest in winter—not drying-off—the plants will start freely in the regularly advancing heat suitable for Vines, and the shade of the foliage of the Vines is suitable for the then growing Orchids. Orchids generally thrive better in houses wholly devoted to them, because the plants then receive special attention; but with ordinary care they flourish well, and none better than the *Odontoglossum*, in a well-managedinery. It is probable that many having glass structures deny themselves the pleasure of cultivating Orchids, fearing that the plants would not flourish because they were not placed in an "Orchid house." But ainery becomes an Orchid house if filled with Orchids, and the

plants prosper as well as if the house were called by any other name.

Very choice Orchids, however, such as the one figured, require and are worthy of particular care, and grow more freely with a somewhat higher range of temperature than mentioned above. Of great importance to these plants are pure air, a moist atmosphere, and a very open compost. The potting material should be composed of sphagnum, rough fibrous peat, lumps of charcoal, and crocks. The pots should be nearly filled with crocks, and the plant should be potted well up above the surface of the pot, the compost forming a mound which should be covered with live sphagnum. This should be encouraged to grow freely, which is highly conducive to the health of the Orchids.

Odontoglossum Roezlii, which is one of the most beautiful



Fig. 41.—*ODONTOGLOSSUM ROEZLI*.

Orchids in cultivation, was discovered by Mr. Roezl in New Grenada, and first flowered in England in 1873. Plants have been frequently exhibited by Messrs. Veitch, Williams, and Bull in several varieties, some being pure white and others more or less deeply coloured with reddish purple at the base of the petals, forming a fine contrast with the pearly whiteness of the petals and lip. One of the finest of the coloured varieties, also the finest plant that has been exhibited, is the one now figured. It was staged at the Royal Horticultural Society's exhibition on April 4th by Mr. Loveland, gardener to J. Hepburn, Esq., Sidcup Place, Kent, when a cultural commendation was worthily awarded for the specimen. Mr. Hepburn has favoured us with the following details of culture:—"The treatment of the *Odontoglossum Roezlii* has been very simple. It was potted in fibrous peat and sphagnum mixed with small lumps of charcoal and crocks, the pot three-parts filled with crocks for drainage, and the plant well set up 2 or 3 inches above the brim. It has been grown in the Cattleya house suspended about a foot from the glass, temperature about 55° at night in winter, never under 52°. In watering the pot has always been dipped in tepid soft water

10° to 15° above the temperature of the house, taking especial care that the bulbs were not wetted at the base. The leaves have been often carefully sponged with tepid water. I find that the same treatment suits *Odontoglossum vexillarium* very well."

The two Orchids named by Mr. Hepburn as flourishing under the treatment he has described so clearly and concisely, are recommended to all who possess the means of growing them, as two of the most beautiful representatives of a beautiful family of plants.

PRIMULA AMENA.

AMONGST this charming family of spring-flowering plants are many beautiful species and varieties which are not so well known as they deserve to be. The species of which an outline is given is one of them. It is the purple Caucasian Primrose, and is highly attractive. The name of *amena* is usually applied by modern growers in connection with *Primula cortusoides amena*, which is extensively and deservedly cultivated for greenhouse and conservatory decoration. The

purple Caucasian Primrose is, however, totally distinct from that plant, and if not less beautiful is much less common than it is.

Primula amœna was introduced from the Caucasus more than half a century ago. It is quite hardy, grows freely, and flowers early, indeed earlier than most other species. But



Fig. 42.—PRIMULA AMŒNA.

although it is hardy and will thrive well in sheltered nooks in chalky districts and on rockeries, it is seen to much better advantage when cultivated in pots and is accorded the treatment usually given to *P. cortusoides amœna*, *P. denticulata*, and a few others. The shelf of a light greenhouse or the protection of a cold frame answers admirably for this class of

plants. The leaves of *P. amœna* are very like those of the common Primrose, and the habit of the plant when flowering is not unlike *P. denticulata*, while its flowers are much larger than those of that species, and they are also richer in colour. The plant was discovered by Bieberstein in the Caucasian Alps, and is one of the most beautiful of the genus to which

it belongs. It is increased by division of the roots, and grows freely in loamy soil.

THE NATIONAL AURICULA SOCIETY'S SOUTHERN SHOW.

This long-looked-for contest took place, as already stated in the Journal, on the 24th, and without doubt the Fates were unpropitious. Seven exhibitors competed—five from the north and two from the south; the remarkably disappointing weather of the month of April preventing some others from entering the lists. My own inability to exhibit was in some degree attributable to this, for although my earlier plants had fallen a victim to disease, yet I had sufficient left to have enabled me to have entered in some classes had they not been so late. And this was quite contrary to what had been anticipated. In March the bloom promised to be an early one; but although the trusses got well up above the foliage and the buds increased in size, they remained—open they would not, and hence so many growers were unable to put in an appearance. Your reporter's observations on the literature of florists' flowers are quite just; it depends very much on who makes the observations. My duty, however, at present must not be that of a controversialist, but simply of a critic, first in a general way and then in detail.

As to the arrangements of the Show nothing could have been better, although the Crystal Palace is hardly the place to show off so small a flower as the Auricula, it is too overwhelming in its size. And as some of our Manchester friends were there they will, I hope, see that to use, as on this occasion, smaller pots and to have them neatly filled-in with moss is better than to have the plants wobbling about in large pots; while it is better to place the undecorated flowers in regular order rather than to have them highlegged-piggledy about on the tables. Then as to the general character of the exhibits, they bore in many instances unmistakable evidence of having been subjected to a higher temperature than the Auricula likes; and there were many plants which, had they not had their crutches, would have been gracefully nodding to the visitors, so drawn were the stems. As good Ben. Simonite said, they had been obliged to boil them down to get them in. These observations apply to both north and south, some even of the champion grower's plants bearing evidence of it. No Auricula grower would, I believe, subject his plants to a higher temperature than that of an ordinary matted frame if he could help it. Then as to that most vital point the judging. Nothing could have been more conscientious and painstaking in the classes of Auriculas. The Alpines, Polyanthus, &c., had little charm for me, and so I did not examine them minutely; and I am sure all true lovers of the flower must be indebted to Messrs. Tymons and Parsons for their able services. When, then, the flowers of our friend Mr. Horner occupied so prominent a position as they did, it may be assuredly gathered that they had attained a high state of excellence. It is all very well for him to say, with that modesty which is ever a characteristic of a true man, that he deserves no thanks, that the breezy moorland near which he lives and the mountain loam which he can procure for his plants are the causes of his success; but no one who has read anything he has written but must see that they are the objects of most loving care and skillful attention, and that while situation may have something to do with it, that something would be of little avail were it not supplemented by those qualities which he so eminently possesses.

And now with regard to individual flowers in the several classes. In green edges I was agreeably disenchanted with regard to one flower, Prince of Greens. Seeing it placed so highly by such judges as Messrs. Horner and Simonite, and hearing that it was unattainable by ordinary mortals, it only made one's mouth water to hear of it; and although I was somewhat doubtful of it last year at Manchester, I hardly ventured to be heretic enough to go against such authorities until I had seen more of it. Well, having now carefully examined, I honestly say I do not care about it. It has some undeniably good points. The paste, edge, and colour are excellent, but it has a wretched, watery, dead-looking tube which takes all life out of the truss, and it has also very long awkward footstalks, so that the truss is very sprawling, the pipe being thrown about like a spider's legs. Traill's Anna, on the other hand, I think quite deserves its position; it is in the style of Booth's Freedom and apparently a seedling from it, with greater robustness of habit, and is a most useful exhibition flower. Of the older kinds Page's Champion, Booth's

Freedom, and Col. Taylor held their own; while amongst those not yet in commerce was Simonite's Talleman, with a good green edge, black body colour—perhaps a little too much of it, and with a good yellow tube. Passing to the grey edges, here again novelty has to some extent, I think, run away with sober judgment. I do not at all deny the beauty of Alexander Meikl-john, but I doubted last year whether it would be a beat on George Lightbody, an opinion also given by my friend Mr. Tymons, and I saw no reason to alter my judgment this year. It is a very good flower, but still the premier flower is the older one, and as such it obtained the premier prize of the Show. George Levick is also a very good flower, but having George Lightbody I should be content to be without it. Lancashire's Lancashire Hero was grand; indeed it was almost a question whether the bloom exhibited by Mr. Simonite was not the premier plant: it was almost a tie between it and George Lightbody. Charles E. Brown was also shown very well, and being a "great doer" is doubtless a great acquisition as an exhibition flower; it sometimes, as is the case with other grey edges, comes quite a green edge. Of William Bradshaw more must be seen before one can pronounce an opinion upon it, save that it is a promising flower.

White-edged flowers are a limited class, and some even of the most cherished flowers will have a dash of grey. Rarely is so pure a white-edge as Taylor's Glory to be met with; Smiling Beauty is good, but I think the edge of Smith's No Plus Ultra is purer. There was a flower, however, exhibited by Mr. Simonite which promises to be the best of its class, Frank Simonite. "It ought," said the raiser, Ben. Simonite, "not to be called after a boy, but he is a good little chap and so he has a right to it." Well said, daddy, and may the good little chap be a comfort to you and-and-by. The flower is grand, of fine habit, good stout stem, deep plum or violet body colour, its one defect having too pale an eye, but though pale it is not dead. The same raiser's Fanny Crossland is pretty, and so is Walker's John Simonite, bright yellow tube—a grand point, paste dense, body colour black, and edge pure white.

Amongst selfs, Lord Lorne, Duke of Argyll, Campbell's newer crimson selfs, were good; but notwithstanding the commendation bestowed on Ellen Lancaster, I do not think it equal as a dark self to Pizarro when the latter can be had without the paste cracking. Charles Perry and Spalding's Metropolitan run one another very closely, but I think my preference is to the latter flower, it having more substance in it. Mr. Simonite had a crimson seedling which promises well. These bright flowers are very valuable on a stage, as lighting-up the darker varieties. Mr. Douglas's new Alpine Silvia is undoubtedly a flower of great promise.

In last week's Journal I said that perhaps after the Show I should get a little enlightenment on the disease from which Mr. Llewellyn and myself have suffered. I was glad to meet him, and to find that he had been good enough to send some specimens of the insect to Mr. Andrew Murray. I brought up one of my plants which had been attacked to the Show, and Mr. Llewellyn pronounced it to be identical with his; and as it is not the Apple blight, but an allied species, one may hope not to be inconvenienced by the marauder a second year; at any rate I shall be sharper on the look-out for him, and hope if he does come to attack him in time.—D., Deal.

YEARS and years ago—how many? Well, I think more than forty—I used to go far out of my way to look at the florist flowers in the window of the shop in front of Groom's Nursery in the Walworth Road, and well did I feel myself repaid for the extra walk when I had the delight of gazing through the glass at a few Auriculas. Later on I saw Mr. Crook's then well-known collection, Mr. Chappell's, and some others. From then till now I have not ceased to see those flowers in my mind's eye. Years rolled on, flower shows came and went, but there were scarcely any or no Auriculas; and the longing was still strong within me to see a show of Auriculas. The old, old sort—the green, the grey, and the white-edged—all full of marvellous beauty, all full of interest to the naturalist, the artist, and the florist. To the first as proving what can be done by selection, to the second as flowers of fine and harmonious colour and of exquisite form, and to the third (the true florist) a thing of beauty and a constant joy and delight. And is not the true florist a combination of all three? He is a lover of Nature, an artist in his idea, and a florist because he loves beauty of form and colour exemplified in certain plants.

The Auricula Show, like many other flower shows, has come and gone, but unlike them it has left its mark. It astonished

the general habit of the ordinary flower show, who goes away often exclaiming, "But as usual, mostly alike," &c. Seldom have I seen the public take such real interest in a floral show, and never have I known them come from so far. Looking around I saw some friends from Wales. "Ah!" said I, "what brings you here?" "The Auriculas," said my friend; "we came to London on purpose." These were not growers of the plant, but lovers of it; but now, having seen it in all its glory, they will be the former hereafter. Friends from Ireland and Scotland, and many of our northern counties, Kent, and Sussex were there—all pleased, joyous, delighted. Surely on the 24th the Auriculas had its revenge over the bedding plants for the neglect it has experienced for so many years. Grey-headed men were saying, "What a treat! it brings back old days." "Yes," said another, "it makes one feel quite young again." It's a good beginning, is it not? By this I learned that it was only London show No. 1. The next year there would be another, and so on and on. "Where is Mr. Turner?" said I. "Here," said a voice almost close to my elbow. "Thanks. Now tell me, can you help me? I am a lover of Auriculas; now I must be a grower. Here is my list I want to begin with." Mr. Turner looked grave for once in his life; the sunny light left his face as he slowly said, "You begin well," &c. George Lightbody "not to be had." Here was a damper. Others I longed for "not to be had." Still I shall make a beginning. Mr. Turner will help, and one or two other gentlemen; so hurrah for next year, when I trust others beside myself will have taken up "the fancy" in right good earnest. The south of London in particular will again be what it once was—the home of the high-bred Auricula.

The greatest difficulty appears at present, as far as I can see, to obtain the plants to start with. One, of course, knows where the beauties shown came from, but they are not in commerce. As far as I can learn Mr. Turner is the only man to turn to, but even he has not a "George Lightbody" to part with. "He who waits wins" is an old proverb; so southerners must start with what we can get now, and trust to time and "a good look-out" for the rest. Yes, the National Auricula Show at the Crystal Palace has come and gone—gone from before our organs of vision to find a home in our memories; gone like a dream, yet leaving a waking reality. It was, and it still is, in the minds of the lovers of the beautiful, for it lies embalmed in that wonderful sense—memory.—HARRISON WEIR, Weirleigh, Breckley, Kent.

FRIENDS AND ENEMIES.

"A MASTER GARDENER" is, I think, in error when he classes tomtits as gardeners' enemies. I regard them as friends, and am able to adduce conclusive evidence of their insect-devouring propensity, while I have failed to see that they commit any injury to plants or fruit trees by eating or destroying their buds.

Two years ago I was surprised to find one of these little birds in a plant house, apparently sporting amidst the foliage and flowers of a large plant of *Coronilla glauca*. Every morning during a week in February the bird was there when I entered the house. The plant was in a corner, and was partly hidden from view by other specimens, at least so much so as to prevent me seeing what the bird saw—thousands of aphides clustered around and amongst the flower trusses. Every one of these insects, so far as I could see, the bird picked off and devoured. I then brought into the house another infested plant, which was similarly cleared of insects by my little friend. The bird had found its way into the house through a small hole in the glass, and flew in and out at will, and not once during the spring had I occasion to fumigate, the tomtit effectually keeping all the plants perfectly free from insects, and it did not in any other way do the slightest injury.

In hearing this testimony to the undoubted usefulness of a bird which "A MASTER GARDENER" has certainly misjudged, I regret that I have not a good word to say for the bullfinch. For I have had the same unmistakable evidence of his insect-devouring propensity as I had of the tomtit's insect-destroying nature. I regard bullfinches as implacable enemies, tomtits as real friends, and I act accordingly.—J. W. S.

I cannot forbear adding my testimony to that of your correspondents "WILTSHIRE RECTOR" and HARRISON WEIR, in reply to the very extraordinary statements of "A MASTER GARDENER" on page 290. Passing over the exploded nonsense about hedgehogs sucking cows, I beg to say a word about

bullfinches and tomtits from my own personal experience of many years. We are told that "the bullfinch rarely frequents the garden." I can only say that for the last twenty-five years not one season has passed that my Gooseberries and Currants have not been more or less, generally very seriously, injured by the bullfinch. I am a great lover of birds, and would rather bear all their mischief than be deprived of them, but bullfinches we are obliged to wage war with, as the injury done by them in the spring is far worse than that of any other bird in the fruit season. A friend writes me word that this spring some of his trees he believes are killed, so completely have they been disabused by these birds.

"The tomtit," says "A MASTER GARDENER," "is a far greater enemy in the garden than the bullfinch." My experience tells a very different story. That pretty little bird is very greatly maligned, simply, I believe, because people will not give themselves the trouble to find out the truth of what they write about it. I have most carefully watched the movements of the tomtit, knowing that appearances were against him. I have seen him diligently visiting every individual bud upon a Currant tree, and on his leaving it I have gone and carefully examined it, and never found a single bud broken off or lying on the ground. The most cursory observer must see at once that the beak of the tomtit is not formed for the destruction of buds like that of the bullfinch, but is small, thin, and weak; but it is well adapted for the use which no doubt he makes of it—picking out insects and their eggs deposited in the interstices of the clusters of fruit buds. He is a useful bird, and ought to be protected. I never allow one to be destroyed.—SIGMA, Herts.

NEW BOOK.

Garden Receipts. Edited by C. W. QUINN. Macmillan & Co.

THIS is a very useful book for reference. The recipes include information relative to every garden operation. One extract will be good evidence in its favour.

"NAILS.—When nails begin to rust it is almost impossible to stop them from becoming eaten away in a very short time; in this case prevention is better than cure. Mix one pint of linseed oil with 2 ozs. of black lead, stirring until the whole is thoroughly incorporated; heat the nails red-hot and steep them in the mixture. They should then be well drained and shaken up in an old nail-bag until dry. The linseed oil and black lead cover them with a film of varnish which is impervious to wet. The above proportions will serve for an almost indefinite quantity."

EARLY WRITERS ON ENGLISH GARDENING.

No. 30.

JOHN CLAUDIUS LOUDON.—*Concluded.*

IN 1822 appeared the first edition of the "Encyclopædia of Gardening;" a most laborious work, remarkable both for the immense mass of useful matter it contains, and for the then unusual circumstance of a great number of finished wood engravings being printed with the text instead of being in separate pages. This book had an extraordinary sale, and fully established the literary fame of its author.

In the early part of the year 1823 he wrote a work entitled "The Different Modes of Cultivating the Fine Apple, from its First Introduction to Europe to the Improvements of T. A. Knight, Esq., in 1822."

About this time also a little work was published anonymously, called "The Greenhouse Companion," which I believe was written either entirely or in part by Mr. Loudon; but it must have been by a wonderful exertion if he did write it, as during the whole of the year 1823 he suffered most excruciating pain, not only from his right arm, the bone of which had never properly united, and to retain which in its place he was compelled to wear an iron case night and day, but from the rheumatism which had settled in his left hand, and which contracted two of his fingers and his thumb so as to render them useless. It is, however, worthy of remark, and quite characteristic of Mr. Loudon, that at the very time he was suffering such acute bodily pain he formed the plan of his houses in Porchester Terrace, Bayswater, and superintended the building of them himself, rising at four o'clock every morning that he might be on the spot when the workmen came to their work.

In 1824 a second edition was published of the "Encyclopædia of Gardening," in which the work was nearly all rewritten and very considerable additions were made to it. In the following year, 1825, the "Encyclopædia of Agriculture" was written

and published. These extensive and laborious works following closely upon each other, in Mr. London's state of health, speak strongly as to his unparalleled energy of mind. When, shortly after, his right arm was broken a second time, and he was obliged to submit to amputation, though he gave up landscape gardening, it was only to devote himself more assiduously to his pen. He was, however, now no longer able to write or draw himself, and he was compelled to employ both an amanuensis and a draughtsman. Still, though he had only the use of the third and little finger of his left hand, he would frequently take a pen or a pencil and make sketches with astonishing vigour, so as fully to explain to his draughtsman what he wished to be done.

During the time that he was suffering so severely from the pain in his arm he found no ease but from taking laudanum, and he became at last so habituated to the use of this noxious potion that he took a wineglassful every eight hours. After the amputation of his arm, however, he wished to leave off taking it, as he was aware of its injurious effects upon his general health; and he contrived to cure himself by putting a wineglassful of water into his quart bottle of laudanum every time he took out a wineglassful of the potion, so that the mixture became gradually weaker every day, till at last it was little more than water, and he found he had cured himself of this dangerous habit without experiencing any inconvenience.

In 1826 he established "The Gardener's Magazine," the first periodical devoted exclusively to horticultural subjects. This work was always Mr. London's favourite, and the organ through which he communicated his own thoughts and feelings to the public. It was originally undertaken principally for the benefit of gardeners in the country, in order to put them "on a footing with those about the metropolis;" but it soon became the universal means of communication among gardeners, and was of inestimable benefit to them. It also became a source of great pleasure to amateurs of gardening, and was no doubt the means of inspiring a taste for the pursuit in many who had before been indifferent to it. "In an art so universally practised as gardening, and one daily undergoing so much improvement," Mr. London observes, "a great many occurrences must take place worthy of being recorded, not only for the entertainment of gardening readers, but for the instruction of practitioners in the art."—(*Gard. Mag.*, vol. 1, p. 1.) That this work met the wants of a large class of readers is evident from four thousand copies of the first number having been sold in a few days, and from the work having continued popular for nineteen years, and in fact till its close at the death of its conductor.

In the year 1828 "The Magazine of Natural History" was begun, being the first work of its kind; and this work, though not quite so successful as "The Gardener's Magazine," was very popular, and had numerous imitators. Towards the close of this year Mr. London paid another visit to the Continent to obtain information for a new edition of the "Encyclopedia of Agriculture." After traversing France he proceeded through Strasburgh to Munich and Stuttgart; he afterwards visited Heidelberg and Carlsruhe, and returned by Metz to Paris, and thence to England. In "The Gardener's Magazine" for 1828 he began to give an account of this tour, and he continued it through several of the succeeding volumes, interspersing the descriptions of the various places he saw with a mass of valuable reflections on various subjects, which he conceived would be useful to gardeners.

In 1830 he married, and immediately after his marriage began to rewrite the "Encyclopedia of Gardening," which was published in the course of the year 1831. On the 1st of October, 1830, he published the first part of a work in atlas folio, entitled "Illustrations of Landscape Gardening and Garden Architecture;" but, from the very expensive nature of the work and the limited number of subscribers, he found it necessary to discontinue it, and it did not proceed beyond the third part, which appeared in 1833. In the beginning of the year 1831 he had an application to lay out a botanic garden at Birmingham, and he agreed to do it merely on the payment of his expenses. Mr. Paxton's "Horticultural Register" was the first rival to "The Gardener's Magazine," which at the time produced 2750 a-year; but which gradually decreased from the appearance of "The Horticultural Register" till the period of Mr. London's death, immediately after which it was given up.

In 1832 Mr. London commenced his "Encyclopedia of Cottage, Farm, and Villa Architecture," which was the first work he ever published on his own account; and in which,

says Mrs. London, I was his sole amanuensis, though he had several draughtsmen. The labour that attended this work was immense, and for several months he and I used to sit up the greater part of every night, never having more than four hours' sleep, and drinking strong coffee to keep ourselves awake. The "First Additional Supplement" to the "Hortus Britannicus" was also prepared and published in 1832.

The great success of the "Cottage Architecture," which is perhaps the best and most useful of all Mr. London's works, tempted him to publish the "Arboretum Britannicum" also on his own account. He had long intended to write a work on the hardy trees of Great Britain, but he did not contemplate the expenses which he should incur by so doing. When, however, the "Arboretum" was once begun he found it was impossible to compress it into the limits originally intended, and in his determination to make the work as perfect as possible he involved himself in the difficulties which hastened his death. Notwithstanding the immense labour attending the "Arboretum," which was published in monthly numbers, Mr. London, in March, 1834, began the "Architectural Magazine," the first periodical devoted exclusively to architecture; though, like "The Magazine of Natural History" and "The Gardener's Magazine," it only served as a pioneer to clear the way for others, which afterwards followed in the same course with much greater success.

From the year 1833 to midsummer 1838 Mr. London underwent the most extraordinary exertions both of mind and body. Having resolved that all the drawings of trees for the "Arboretum" should be made from nature he had seven artists constantly employed, and he was frequently in the open air with them from his breakfast at seven in the morning till he came home to dinner at eight in the evening, having remained the whole of that time without taking the slightest refreshment, and generally without even sitting down. After dinner he resumed the literary part of the work, and continued writing, with me as his amanuensis, till two or three o'clock in the morning. His constitution was naturally very strong, but it was impossible for any human powers to bear for any lengthened period the fatigue he underwent. In 1836 he began "The Suburban Gardener," which was also published in monthly numbers, so that he had five monthly works going on at the same time. He soon found, however, that three monthly works besides the "Arboretum" were as much as his health would permit him to undertake the management of, and he disposed of "The Magazine of Natural History" to Mr. Charlesworth. In 1838 he also gave up "The Architectural Magazine," and at midsummer in that year he finished the "Arboretum Britannicum." He was now in circumstances that would have discouraged almost any person but himself. His health was very seriously injured, partly by what was supposed to be a liver complaint, and partly by an enormous swelling in his right knee, which some of the most eminent medical men in London supposed to be produced by a disease in the bone.

In 1839 Mr. London began to lay out the arboretum so nobly presented by the late Joseph Strutt, Esq., to the town of Derby. In the same year he published his edition of Repton and his "Second Additional Supplement to the Hortus Britannicus." In 1840 he accepted the editorship of "The Gardener's Gazette," which, however, he only retained about a year.

In December, 1841, appeared the first number of the "Encyclopedia of Trees and Shrubs," the work consisting of ten monthly numbers. The abridgement of the "Hortus Lignosus Londinensis" was published immediately on the conclusion of the "Encyclopedia of Trees and Shrubs," and in May, 1842, appeared the "First Additional Supplement to the Encyclopedia of Cottage Architecture."

In addition to the works which have been enumerated Mr. London contributed to several others, such as the "Encyclopedia of Domestic Economy" and "Brand's Dictionary of Science, Literature, and Art." He also wrote the article Planting for the new edition of the "Encyclopedia Britannica."

Early in March, 1842, he had an attack of inflammation of the lungs, and on his recovery we went down to Brighton for some weeks. We afterwards made a tour through Somersetshire, Devonshire, and part of Cornwall; and on our return to Exeter Mr. London went to Barnstaple, in the neighbourhood of which he was about to lay out some grounds for Lord Clinton. When he returned home I noticed that he had a slight cough, but as it was trifling it did not make me uneasy, particularly as his spirits were good. He now finished his "Suburban Horticulturist," which had begun two years

before, but had been stopped on account of his illness in Scotland; and this work was published by Mr. Smith of Fleet Street, all his other works, from the appearance of the "Encyclopædia of Gardening," having been published by Messrs. Longman.

In 1843 his time was chiefly occupied by his work on Cemeteries, with which he took extraordinary pains, and which was very expensive from the number of the engravings. In August we were invited to Derby to pay another visit to Mr. Strutt, but he was too ill to go, and the doctors pronounced his complaint to be a second attack of inflammation of the lungs.

Previously to Mr. Loudon's illness I had agreed to write a little book on the Isle of Wight, and to visit it for this purpose. When we reached the Isle of Wight I was struck with a degree of listlessness and want of energy about him that I had never seen before. He became rapidly worse while we were in the island, and most eager to leave it. On our arrival at Southampton, where he was laying out a cemetery, he felt better, and, taking a lodging there, he sent Agnes and myself back to town. In a fortnight I went down to see him, and I shall never forget the change I found in him. The first look told me he was dying. His energy of mind had now returned. He not only attended to the laying-out of the cemetery at Southampton, but during his stay in that town he corrected the proofs of the second "Supplement to his Encyclopædia of Agriculture," and then went alone to Bath, in spite of my earnest entreaties to be permitted to accompany him. At Bath he inspected the ground for another cemetery, and also the grounds of a gentleman named Pinder, though he was obliged to be wheeled about in a Bath chair. He then went, still alone, to Kiddingington, the seat of Mortimer Ricardo, Esq., near Enstone, in Oxfordshire, where he was also obliged to be wheeled round the gardens in a chair. When about to leave Kiddingington he appeared so ill that Mr. Ricardo offered to send a servant with him to town.

He returned to Baywater on the 30th of September, 1843, and at last consented to call in medical aid, though he was by no means aware of his dangerous state. On the 2nd of October I went with him to call on Mr. Lawrence, in whom he had the greatest confidence, and that gentleman told him without hesitation that his disease was in his lungs. He was evidently very much struck at this announcement, but as he had the fullest reliance on Mr. Lawrence's judgment he was instantly convinced that he was right, and I think from that moment he had no hope of his ultimate recovery, though, in compliance with the wishes of different friends, he afterwards consulted several other eminent medical men, of whom Dr. Chambers and Mr. Richardson attended him to the last.

As soon as Mr. Loudon found that his disease was likely to prove fatal he determined if possible to finish the works he had in hand, and he laboured almost night and day to do so. He first, with the assistance of his draughtsman, finished a plan for Baron Rothschild; then one for Mr. Ricardo, another for Mr. Pinder, and finally a plan for the cemetery at Bath. He had also engaged to make some additional alterations in the grounds of Mr. Fuller at Stratham, and he went there on the 11th of October, but he was unable to go into the garden; and this was the last time he ever attempted to visit any place professionally. He continued, however, to walk in the open air in his own garden, and in the grounds of Mr. Hopgood, nurseryman at Orsvon Hill, for two or three days longer, though his strength was fast decreasing; and after the 16th of October he did not leave the house, but confined himself to his bedroom and a drawing-room on the same floor. About the middle of November the medical men pronounced his disease to have become chronic bronchitis, and this information combined with a pressure of pecuniary difficulties had a powerful effect upon him. He now made an effort that can only be estimated by those who know the natural independence of his mind and the pain it gave him to ask even a trifling favour. He wrote a letter stating his situation, and that the sale of 350 copies of the "Arboretum" would free him from all his embarrassments. This letter he had lithographed, and he sent copies of it to all the nobility who took an interest in gardening. The result was most gratifying. The letter was only dated the 1st of December, and he died on the 14th of that month; and yet in that short space of time the noblemen he appealed to, with that kindness which always distinguishes the English aristocracy, purchased books to the amount of £360.

It was on the anniversary of the death of Washington (the 14th of December, 1843) that Mr. Loudon died, and he was

buried on the 21st of December in the cemetery at Kensal Green. When the coffin was lowered into the grave a stranger stepped forward from the crowd and threw in a few sprays of Ivy. This person was an artificial flower maker, who felt grateful to Mr. Loudon for having given him, though a stranger, tickets for admission to the Horticultural Gardens, and who, never having been able to thank Mr. Loudon in person, took this opportunity of paying a tribute to his memory.

The following is the inscription on his monument—

SACRED TO THE MEMORY OF
JOHN CLAUDIUS LOUDON,
Born April 8th, 1783, at Cambeslang, in Lanarkshire.
Died December 14th, 1843, at his house at Baywater.
"His works are his best monument."

—(Mrs. Loudon's Self-Instruction.)

CAMELIAS FOR BACK WALLS OF VINERIES.

ALL gardeners know how suitable are vinerias for Camellias when the plants are making their growth in the spring. The moisture of the house and the temperature necessary for the Vines are exactly suited to the well-doing of Camellias, and the shade from the roof afforded by the foliage of the Vines prevents the sun scorching the tender foliage of the plants. Remembering this, and having failed to clothe the back wall of the vinery satisfactorily with various other plants, I some years ago planted near it some Camellias. Their growth was rather slow for a time, but it was sure, and now the wall is covered in every part with the healthy foliage of Camellias which annually produce hundreds of handsome flowers for cutting. So numerous are these flowers and so fine, and so valuable are they from Christmas onwards, that I believe if the produce of the Camellias and that of the Vines were sold in Covent Garden, that the flowers would realise as much as the fruit, although the Vines yield satisfactory crops.

Were I planting a vinery for profit I should cover the back wall with Camellias, but I should not plant them until the roof was covered with foliage, and when the shade became too dense for such crops as Cucumbers and Tomatoes. The most valuable Camellias, because free growers and producing splendid pure white flowers, which I have found for the back wall of a vinery, are the old Alba Plena and Mathotiana Alba. The best red in my small collection is Imbricata, and the best pink *Saccio nova*; but the whites are the best. Can anyone recommend better plants for the back wall of a vinery than Camellias? Many walls are bare and ugly, and the best plants for covering them might with advantage be recorded in the Journal.—J. STEVENS.

HARDY EVERGREENS AND FLOWERING TREES AND SHRUBS

WHICH FLOURISH IN THE LONDON PARKS AND GARDENS.

A WELL-PLANTED shrubbery—where judicious grouping has been observed both as regards height, form, and colour of foliage and blossoms—is always attractive; but all kinds of trees and shrubs do not thrive in a murky atmosphere, and it may be instructive to note such as give satisfaction in the parks and gardens of London. Although the collection is necessarily restricted, still the best is made of what will grow, no matter to what genera they belong; and those which flourish the best in London will be the best for town gardens generally. In town gardens especially it is true wisdom not to plant for the sake of novelty, but rather to plant for effect those shrubs which are easy to obtain and which are good for the purpose required. A fine specimen of an ordinary shrub is more admired than a shabby example of a rare shrub, and a collection of fine well-grown specimens is more satisfying than a collection of novelties, however distant may be their native homes, or however much money they may have cost. It is gratifying to know that there are a goodly number of all kinds of ornamental trees and shrubs which will flourish in town and country alike, and will suit the taste of most persons. To those who have the means and the desire to make attractive shrubberies the following evergreens will give satisfaction:—

Aucuba japonica, with olive green and spotted leaves, decked with a profusion of Cherry-like berries, is a conspicuous object. It has a tender look, but is more hardy than the common Laurel and stands smoke better.

Arbutus or Strawberry Tree.—Indigenous in Ireland, but quite at home in London. The bark is red the flowers are yellowish white and red, hanging like little wax bells; the

fruit much resembles the Strawberry. This shrub grows to the height of 10 feet.

Buxus sempervirens (Tree Box).—This is an excellent and most useful shrub, for it will flourish under the shade and drip of trees and shrubs of larger growth.

Cotoneasters.—The principal beauty of the trailing species consists in their close growth and the numerous bright berries, which continue all winter. These trailing evergreens are useful for mounds, banks, rockeries, or low walls.

Daphne Laureola (Wood Laurel) is an old but handsome low-growing shrub with sweet-scented flowers. It will do well planted in the shade of other trees in town or country gardens.

Euonymus japonicus is always beautiful. The variegated kinds are lovely, superseding the Holly in the London gardens; but they are not so hardy as the green kind.

Ulex europæus flore-pleno (Double Furze) is worthy of a place in every shrubbery, not only for its delicate green foliage, but for its sweet-smelling and abundant flowers. It almost gives the appearance of a "bit of the country" brought to town when planted in large masses.

The Holly.—Of all the shrubs for ornamenting the lawn or affording shelter and retirement to the pleasure walk it has no equal, and all kinds thrive to perfection in almost any situation. Both the green and variegated Hollies are quite at home in sunshine and in shade, and form graceful ornaments. They are lively in winter when covered with berries, and are always highly appreciated at Christmas.

Mahonia japonica, *M. aquifolia*, *M. Bealii*, and a few others have magnificent foliage, and they are not surpassed by any other hardy shrubs. They form dense bushes of lively green. During early spring they are covered with bright flowers, which are succeeded by bunches of Grape-like berries. They will grow under trees, and for this purpose they are becoming popular for game cover, and the more so as the berries are food for pheasants. *Mahonias* thrive well in London gardens.

Ligustrum (Privet) are both useful and attractive when they attain to a good size. *Ligustrum lucidum*, *L. sempervirens*, and *L. japonicum* I can strongly recommend for town squares and gardens.

Phillyreas.—These are hardy, bear smoke well, and grow in poor soil as well as any shrub in a town garden. The best for general purposes are *P. angustifolia* and *P. latifolia*. The first-named is most commonly met with. It forms dense masses of rich dark green verdure all the year round.

Rhododendrons are the most showy and beautiful of evergreens. They succeed well in the parks and gardens of London, but require special treatment in order to have them in perfection. They must be planted in peat, and when growing in an open exposed situation it is requisite to water them frequently, or their flower buds wither without expanding.

Viburnum Tinus (Laurastinne).—This shrub grows best in an exposed situation, and will thrive in any loamy soil. It frequently continues flowering all through the winter. It is highly ornamental in shrubberies and on lawns, and if it should be cut down by severe frost it will shoot again from the roots. It should never be allowed to grow too large, for young plants flower much better and maintain a more compact and healthy appearance than very large and old shrubs.

Taxus (Yews).—There are several distinct varieties of these, and during all stages of growth they are acceptable ornaments. The Irish Yew (*Taxus hibernica*) is always a striking object in consequence of its upright habit, and can be introduced with great effect in certain points—garden or pleasure-ground plantations.

Crataegus Pyracantha (Evergreen Thorn).—Although this is generally planted against a wall it will stand alone, and may be grown as a bush, and will glow all winter with a profusion of scarlet fruits.

The shrubs contained in this list will be sufficient to make the garden cheerful in winter, but it will always be found that the best assortment of evergreens has a certain dullness during the spring and early summer months unless relieved by deciduous shrubs, which have livelier tints of green and bright blossoms. The addition of these is a great advantage in rendering the garden cheerful and gay at an appropriate period. The first of deciduous shrubs that I will mention as flourishing well in the London parks is the Mezereon; it has long adorned the shrubbery with its beauty. The Naked-flowering Jasmine (*J. nudiflorum*) and *Porphyria viridissima*—produce bright garlands of yellow flowers freely. The *Cydonia japonica* or the Japan Quince is a favourite, and is unrivalled as a spring-flowering shrub when trained against a wall or as a

round bush, as it is grown in some of the parks. Where the brilliant crimson flowers of the species and the white variety (alba) are seen in proximity the effect is very pleasing. Ribes—of which there are red, white, and yellow varieties—are invaluable for producing early flowers. One of the most effective is *R. sanguineum*, which is highly ornamental; so is the yet more delicate white-flowering *Ribes niveum*, the waxy bells of which contrast with sober Laurels and the dark-leaved Holly.

Amongst more noble forms of vegetation that attract, one of the most welcome is the Almond (*Amygdalus communis*) and its varieties, with their delicate rose, white, and bluish-tinted flowers, all of them powerfully fragrant. The double-flowering Peaches are amongst the early bloomers, and are general favourites. Other flowering shrubs which are admired in the parks are the beautiful double-flowering Plums and Cherries.

Magnolia conspicua, with flowers large and fragrant, succeeds admirably. *Crataegus oxyacantha* also succeeds well, but we must wait till the middle of May before we see this genus in perfection in company with the Laburnum with its yellow blossoms hanging over Lilacs and Guelder Roses, which unite in forming an attractive combination. About this time the *Dentzia scabra* shows its pearly buds. *Weigela rosea* will be covered with gay pink flowers, and the Mock Orange, the Syringa, is very much esteemed on account of the fragrance of its white flowers. The common yellow Broom everyone knows, and the effect of it in a shrubbery need scarcely be described; there is a white sort remarkably handsome, which blooms in the London parks all through the month of May. During the summer the Rose *Acacia* (*Robinia hispida*) produces its rose-coloured pea-shaped flowers, and is highly esteemed both in town or country.

Althea Frutex is a beautiful shrub which thrives in London. There are several varieties. The colours are red, white, purple, some flowers being striped and blotched; they are produced on the young wood, and somewhat resemble a single Hollyhock. *Hypericum nepalense* is the best of this fine group of yellow-flowering shrubs; it is popularly referred to by some of the Londoners as the "Yellow Fuchsia." *Spiræas* are useful for the mixed shrubbery. There are several kinds, most of them of an elegant habit. The flowers are much used for dinner-table decoration, for which purpose they are very appropriate.—N. COLE, Kensington.

NOTES ON VILLA AND SUBURBAN GARDENING.

APRIL has passed away, and the "merrie month of May" is ushered in. Everyone, whether engaged in gardening pursuits or not, bails the coming of April with anticipations of pleasure on account of the great benefit vegetation generally derives from its fitting sunshine and quickening showers. It came to us this year in its usual form, and with it the opening buds responded for a time to the returning warmth of the sun's influence. The notes of the nightingale and cuckoo have also been heard, but save and except these signs of spring we should have thought we were passing through the trying, bleak, and thirsty east winds of March.

So ungenial has been the greater part of April that vegetation of all kinds, from the lofty Elm down to the small Cabbage seed germinating in the ground, are very little forwarder than they were three weeks since. The ground being sometimes so completely saturated with heavy thunderstorms, and then so rapidly dried by the winds almost to baking, it has been a very trying time for all kitchen-garden operations, and it is requisite that the hoe be used freely amongst all growing crops, more especially through such as Onions, Parsnips, Carrots, Cabbage, and Kale of sorts, Parsley, &c., not only for the purpose of destroying weeds, but for loosening the soil to admit the air and future rains, which are so necessary to the well-being of all those crops. Place sticks to Peas which are sufficiently forward, and draw the earth on each side of advancing crops. Our first crop of William I. and Dickson's First and Best are looking well, but had it not been for giving them some protection during the late bleak weather they would have been greatly injured. Sow more Peas for succession, and if birds are at all troublesome protect either with Pea-protectors or old fish nets. We could not grow a Pea were we not to protect from the sparrows. It is not often that sparrows eat them after sticks are placed to the rows. Veitch's Perfection, Champion of England, and Ne Plus Ultra are good sorts for present sowing. The first does not require such long sticks as the latter two. The sorts named are prolific and excellent in quality, and it is on this account we recommend them. Seven feet should be allowed between the rows of the tall growers; a sowing of Spinach can be sown between the rows, so that the space is not wasted. Make another owing of Broad Beans needed also the main sowing

of Dwarf Kidney Beans. Negro Long-podded is as good as any for the first crop, followed by Cansdian Wonder. These dwarf Beans are very useful and more appreciated by some persons for table than Scarlet Runners; but runners are very economical, and can be used for ornament as well as for use by sowing them to form screens for hiding any unsightly objects or by the side of palings, providing supports by pieces of string, &c. They may be sown at the present time.

Asparagus grows very slowly, but a day or two's warmth will enable us to cut. We prefer cutting near the surface, the green part being more tender and preferable to the white. By thus allowing the heads to grow we prevent the tops of other heads being severed, which is often the case if a knife is thrust down deeply. Keep the beds free from weeds. If there is fear of any seeds of important crops failing through adversity of weather or other causes, replace them by sowing again immediately; the chances are they may, owing to the season, come right in the end.

Sow Tomatoes and Vegetable Marrows for planting-out at the end of the month, but early Marrows are to be had by using a slight hotbed and frame until the plants are established and the weather warm enough for their welfare. Put two or three seeds in the middle of each light, they will soon germinate. The plants should be hardened-off by degrees, and they will soon take care of themselves.

In the flower garden attention is required to keep all in good order. The early-turned beds will require hoeing and cleaning, the edges to be periodically trimmed with a pair of shears, and mowing must be done frequently. It is a good time to draw out all Plantains, Dandelions, Daisies, and other weeds from lawns when the ground is moist and the roots can be easily extracted with a weeding-hook. Much of the ultimate beauty of pleasure grounds depends upon their condition early in the season.

With a few days of warm sunshine Roses which were pruned early will be pushing their growth, and timely warning is necessary against the worm in the bud. Judging from the extra quantity of caterpillars we have had on our pot plants we anticipate the worms will be very plentiful, and vigilant search must be made as soon as it is possible to discern them. Had we not diligently searched day after day amongst our Roses in pots we should have lost more than half of the blooms. There is no better plan for eradicating the grubs than handpicking: a crush between the finger and thumb soon settles them. Keep all worked Roses free from suckers, and loosening the surface soil with a hoe will be beneficial.

Where annuals are required they may yet be sown; and where Violets are prized—who does not prize them?—they may be divided in as many portions as there are crowns, each crown having a portion of roots, and planted a foot apart in beds. Water them until established, and shade if thought necessary. Continue propagating all kinds of bedding plants used in carpet bedding if required. There is time yet for cuttings of Coleuses and such like to make good plants.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

The ground has lately been comparatively dry on the surface, and an excellent opportunity was afforded for running the Dutch or draw hoes through the soil amongst the rows of Potatoes and Peas; indeed wherever crops were through the ground and the surface was crusted with the rains we had the ground stirred. It has not been good weather for planting, but we put out some rows of spring-sown Cauliflowers 3 feet apart in ground that had been deeply trenched and well manured last year.

Sticks have been placed to the early Peas. The growers for market about this part of Essex allow the haulm to trail upon the ground, the quantity of sticks that they would require could scarcely be supplied from any available source in the district; but in gardens where space is limited and labour sufficient it would be utter waste not to place sticks to the rows of Peas. The sticks should be placed sufficiently close together, but they ought not to meet too closely at the top. A few sprays cut from the tops should be placed amongst the taller sticks. We place the sticks to the Peas as soon as they are too tall for the pea-protectors. The sparrows do not seem to attack Peas after the sticks are placed, although they generally do so if the protectors are removed and no sticks placed to them. When the earliest Peas show a tendency to run too much to haulm the crop is not likely to be in early; but if the points of the leading shoots are pinched-out at the time the blossoms open this will forward the crop considerably. It would be too much labour to top the general crops, nor is it at all necessary, as the only object in doing so is to obtain a dish or two a little earlier.

We generally fall with Cauliflowers during the summer months; but had we deep clayey loam, with the convenience of a suitable situation, we would keep up a supply from May until the frosts cut them off in November, to be succeeded by Broccoli,

which ought to be sown now on ground that is not too rich. When the plants have made the first rough leaf they may be pricked-out in prepared soil, and when large enough they should be planted, some behind a north wall and others in a position where they are more freely exposed to the influence of the sun. Cabbage and Lettuce seeds have been sown to meet the demand for such produce. Brussels Sprouts have also been sown. We find that it is a good plan with this crop to draw shallow drills and to sow the seeds on the ground where the plants are to be grown, dropping a few seeds into the drills at intervals of 2 feet, and when the plants are grown sufficiently they are thinned-out to one at each place. If required the superfluous plants are put out in another part of the ground at the same distance apart. Salsify, Scorzonera, and Chicory may now be sown in shallow drills a foot or 15 inches apart. Weeds had grown up on the Asparagus beds, and they were removed without injuring the crops coming through the ground. A dressing of salt applied at this season is a great preventive of weeds in Asparagus beds.

VINES.

Vines in the late houses are making very rapid growth, and require considerable attention as to tying-down and stopping the lateral growths. This is work that cannot be neglected, and we find it necessary to look over the houses at least twice a-week. It is far better to stop the growths as soon as they are long enough than to allow them to run out and then cut away a quantity of shoots and leaves. Recently instructions have been given how this work ought to be done, and this is merely a reminder urging the importance of not leaving for to-morrow what ought to be done to-day.

Where heat has been used since February the thinning of the fruit will now require to be seen to. This work is of great importance and cannot be neglected with impunity. Black Ham-burgh and all the free-setting varieties will be ready for thinning in ten days after the first flowers on the bunches open. Shy-setting varieties like Muscat of Alexandria are not ready quite so soon. It is necessary sometimes to wait until it is seen which berries will swell freely before the others, which are seen to remain stationary, are removed.

The earliest Vines in pots will now have fruit nearly ready to be cut; if so, less moisture will be required in the atmosphere of the house; but until the fruit is quite ripe the plants must on no account suffer from want of water at the roots. Many gardeners as soon as they see the berries show colour have a notion that the fruit will finish-off better in a dry atmosphere, and they also withhold water from the roots. It is a great mistake to do this, as the Grapes will finish-off better if the Vines have a thorough watering as soon as the berries commence colouring. At that time the fruit swells at a rapid rate, and the watering aids this; whereas the want of water is a check upon the fruit, with the result that it will neither swell well, colour well, nor be of good flavour. When the fruit is quite ripe much less water is required, but the Vines ought never to show signs of distress.

PEACH HOUSE.

If the fruit has taken the second swelling a good supply of water should be given to the borders, and the temperature may be increased to 65° at night, syringing the trees thoroughly with tepid water twice daily until the fruit is within a few days of being ripe; but the atmosphere should still be moderately moist, and more air should be admitted, a little to be left on all night. Later houses will now require watchful care on the part of those in charge. Tying and disbudging the shoots must be attended to, avoiding, as has so often been urged, tying them in too close to each other. Syringing freely where the fruit is just set in the latest house, to clear off withered flowers and to wash off any insects, which now increase rapidly. It will be necessary to destroy thrips and aphids by fumigating. It is not desirable to keep the house too close and warm until after the stoning period, as the fruit may drop off in a close muggy atmosphere.

GREENHOUSE AND CONSERVATORY.

At this season there are many fine species of what are usually denominated Cape or New Holland plants in flower or promising to come into bloom in the course of the next month or two. They are mostly making their growth, and those that were shifted into larger pots recently will now have taken to the new compost that was firmly pressed round the old ball. At all seasons hardwooded greenhouse plants require much care in watering, but extra attention must be given to them when they are making their growth. It is very annoying to see plants which one has taken a pride in die off without any apparent cause, but in very many instances the cause may be found in the fact that at some time or other the plants had either suffered from too much or too little water. The small capillary tubes that absorb their sustenance from the soil have been killed (if matters not by how), and the plant dies of starvation. The best way to act, if this fact is known, is to place the plant in a close house and shade it from the sun for a few days until fresh rootlets are formed.

Heaths of the Ventricosa section are exceedingly beautiful at this season, especially Story's variety of *Erica grandiflora*, also

magnifica, rubra, and Bothwelliana. E. obtata is a fine and distinct sort, so also is E. Candolleana; and of a different type but equally desirable is E. Massoni and the major variety of it.

Camellias have been removed from the greenhouse to a house where they receive a good syringing twice daily and a close, moist, and warm atmosphere. This is intended to mature the wood early, so as to obtain an early bloom. By placing the plants in heat at different times last year we were able this season to obtain blooms from about Christmas until now. At present we have blooms of the double white and red varieties in plenty. The plants will be repotted when the buds are set. Much has been written about potting the Camellia in pure turfy loam, but it answers better to add to it a good proportion of turfy peat. The pots are well drained, and it is necessary to be careful with the numerous white brittle young rootlets which are always present in healthy plants. When in growth Camellias require considerable supplies of water at the roots.

No greenhouse ought to be without forced Roses at this season, as it requires but little heat to have them in bloom early in May. A specimen of Marechal Niel planted out in a border of good loam and trained to the back wall of the house or rafters will produce quantities of its fine golden flowers. They are now coming in in a house where no artificial heat has been used this winter. We find it necessary to re-arrange the plants on the stage at least once every week.

FLOWER GARDEN.

Bedding plants which have been placed out of doors to "harden-off" have had a rough time of it. This so-called hardening-off of tender plants requires some care to see that the plants are not permanently injured. We would like to protect most of the plants with glass lights until the present time; but it is not possible to do this, and the lights are only used for such plants as will not do without them. The others are merely sheltered in earth pits with mats or canvas covering. Celosias, Alternanthera, and Iresine Lindeni are still in a heated pit, and to keep the plants in vigorous health it is necessary to heat the pipes slightly even during warm nights. The lights are removed from the pit during fine days. Asters, Stocks, French Marigolds, and other plants of this character have been pricked out in boxes, and they are also gradually inured to cold frames. Dahlias also require similar treatment. Cuttings that have been recently rooted should be potted-on if healthy vigorous plants are expected.

The lawn and pleasure grounds ought not to be untidy at any time; but at present, when shrubs and trees are putting on their new dress of leaf and flower, the lawn and walks ought to be trim and neat. No withered leaves or litter should be seen to remind us of the wintry months from which we have barely emerged.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, Royal Exotic Nursery, Chelsea, London.—*Illustrated Catalogue of New and Rare Plants.*

William Knight, Halesham, Sussex.—*Catalogue of Greenhouse and Bedding Plants.*

John Warner & Sons, The Crescent Foundry, Cripplegate, London.—*Catalogue of Garden Pumps, Engines, Syringes, &c.*

J. Vander Swaelmen, The Lily Nursery, Gendbrugge, Ghent, Belgium.—*Special Catalogue of Lilies, Bulbs, Azaleas, Herbaceous Plants, &c.*

Messenger & Company, Loughborough.—*Illustrated Catalogue of Horticultural Structures.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

CLEMATIS CIBRIGEA (Alpha).—It is rightly described in the work you mention. It is a hardy evergreen climber, and was introduced from Spain as long ago as 1596. A nurseryman could supply it or obtain it for you.

SPERMATOPHYTES AFRICANA (J. T.).—It is a fine old greenhouse shrub seldom seen now-a-days. The flowers, which are white with yellow and red stamens, are produced in April and May from the old well-ripened wood. The plant is of rather tall growth, but may be cultivated in a pot, the main point being to secure the wood ripening by full exposure to light and air after the growth is complete, with only sufficient water to maintain the foliage fresh, cutting back rather closely to firm ripe wood before growth takes place. Repot after flowering or in June. Two parts fibrous loam and

one part sandy peat, with a free admixture of sand, will grow it well. A greenhouse from which frost is excluded is suitable, with a light airy position.

CLEMATIS FOR FLOWERING IN JULY AND AUGUST (Derby).—We presume they are the green glass ones. They ought to be placed out of doors in an open sheltered situation, partly plunging the pots in ashes. The bloom buds should be removed and growth be encouraged by an increase of pot-room, say to 12 inches, watering freely and sprinkling overhead, giving weak liquid manure after the pots fill with roots. The shoots must be duly regulated and kept low for the first part of the season. It is likely to be too early after placing under a north wall; it not early enough, forward by placing in a cool airy house.

DAHPNE INDICA CULTURE (N. C.).—Repot the plant when it goes out of bloom, or in May or early June, not giving a large shift, but keeping under rather than overpotted, affording good drainage, and employing a compost of equal parts of sandy peat and fibrous loam with six parts of air. Keep the plants rather shaded and sprinkled overhead twice daily, watering carefully for a time until the roots are working freely in the fresh soil, then more freely, avoiding making the soil sodden by overwatering. A greenhouse or a pit in summer is a suitable position, affording plenty of light and air after the growth is complete.

LILY OF THE VALLEY AND SPIREA JAPONICA (Idem).—After hardening the plants well off plant them out in the open ground in rich light soil with the hills entire, watering copiously in dry weather. The Spireas ought to be potted in autumn after the leaves perish, when they will flower another season, but we are not so certain about your Lily of the Valley producing flowers at the same time as the same plant. Much in the closed period on their condition now and the treatment they receive during the summer.

PRUNING PRINCESS LOUISE VICTORIA ROSE (Idem).—Cut it back rather closely and take one strong shoot up the pillar, and do not stop it, and the following season depress the shoot so as to induce the buds to push throughout its length, then secure it in the position required for flowering. Pruning should be restricted to the unripe point of the shoot, which should be cut away to firm wood.

PRUNING PEACH TREES (E. G., Birmingham).—The shoots should always be cut at a wood bud or where there are three buds, the centre one of which is usually a wood bud. A mistake has been made in pruning your trees, or the wood buds have been destroyed by insects. Sometimes a fruit will ripen beyond the leaves, but we should remove the clusters you refer to, and encourage the growth of the shoot nearest the extremities of the branches.

RAISING LARCH FROM SEED (G. S.).—The cones are generally dried on a heated kiln, the best in the kiln, however, at no time exceeding 105° Fahr. When the cones of the Scotch Pine have been thus dried the seeds fall out, but the Larch cones require to be beaten or threshed with a flail to obtain their seeds. They are sown in beds early in the spring, covering half an inch deep with fine soil, and the seedlings are transplanted when one or two years old, according to their size and their thickness in the seed beds.

VALLOTA PURPUREA (D. M.).—Continue your plants under glass for the present, a light greenhouse or frame being suitable. The cultivation of this useful plant will be more fully alluded to in a future number.

POINT OF VINE SHOOT INJURED (H. M. K.).—From the specimen sent we cannot account for it in any way except that the frost at nights may have scathed the leaves, but we should remove the clusters you refer to, and start again from the back buds.

GUANO FOR VINE BORDER (G. Jackson).—The best way to use it is to scatter the guano on the surface, about 7 lbs. on a border 25 feet by 17. Peruvian guano is sold from the docks at the rate of £18 per ton. Crushed bones ought to be obtained at £10 per ton.

PALMBOONEM LEAVES BROWNED (X. Y. Z.).—The leaf presents every appearance of being scorched by the sun's rays falling powerfully upon it, whilst wet, though it may arise from too large an influx of cold air. Afford air moderately, and with brighter weather the foliage will, no doubt, come all right. The Fuchsia cutting having lost its leaves should be kept no more than just moist at the roots, and the stem being alive it will no doubt put out side shoots in the autumn and winter.

DESTROYING MILDEW AND RED SPIDER (R. M.).—Mildew is readily destroyed by dusting the affected part with flowers of sulphur, but this will not kill red spider. On stove plants this pest may be kept down by syringing, and on Vines in its early stages by painting the hot-water pipes with flowers of sulphur mixed into a thin paste and applied with a brush. It will not kill aphids as you have applied it, nor, we think, red spider.

NITRATE OF SODA vs. LAWNS (Constant Reader).—Nitrate of soda if applied in sufficient quantity to destroy Daisies will at the same time kill the grass. A light sprinkling, however, of 1 lb. to a rod (30 sq. square yards) is a good application for lawns—destroying worms and encouraging the growth of the grasses.

DRACENA LEAVES DECAYING (An Old Reader).—It arises from the plants being too heavily syringed, the water dripping from or hanging on the points of the leaves, and is most prevalent in the autumn after clearing them and close.

GUANO WATER FOR DAMPING (Idem).—For damping the floors, &c., of vineries we use it at the rate of 1 lb. of guano to twenty gallons of water (a generally useful strength for the purpose), watering with it such plants as require aid from manure in a liquid state. At that strength it will not kill red spider, much more thrips; but it is injurious to vegetation, and renders attacks of these pests less treatable if it does not prevent them altogether. In case of an attack of red spider we prefer to sprinkle guano over every available surface at closing time, making the surface just yellow, afterwards damping in the usual way. Some plants are injured by the ammonia evolved, notably Gloriosa, Achimenes, and others with very hairy leaves, and its activity which is powerful injures the tender foliage of most plants.

ACARI ON GOOSEBERRY BUSHES (Mr. J. E. B.).—It is not the ordinary red spider, but a species of Acarus common to the Gooseberry and Ivy. It may be removed by syringing forcibly with water from a garden engine, or the bushes may be syringed with a solution of soft soap, 2 ozs. to a gallon of water.

DESTROYING DOCKS ON LAWNS (Old Subscriber).—Fill an old blanching bucket with oil of vitriol, and with the aid of a notched stick drop one drop of the acid into the centre of each Dock. It will speedily burn-up the weeds, but the operator must be careful not to burn himself or his clothes with the "fiery liquid."

DESTROYING DADDY LONGLEGS (Inquirer).—This, the "leather-jacket" of gardeners, is the grub of the Crane Fly (Tipula clarens), the best remedy

for to encourage starlings, which devour immense quantities of the grub, feeding their young when they find the pests are most active—in April and May onwards. We have found nothing so effectual applied by hand as gas lime, spreading it very evenly over the surface at the rate of twenty bushels per acre, but it has the defect of making the grass look brown for a time. Ammoniac liquor is good against the grub, a pint of the liquor to three gallons of water, watering the lawn therewith through a rose watering-pot; also nitrate of soda is good against it either in solutions of 1 lb. to twelve gallons of water to 1 square rod of ground, or 1 lb. of the nitrate sprinkled evenly over a square rod of lawn during the early part of May. All these remedies more or less disfigure the grass, but not materially. If people would allow starlings to have their nests in the roofs of their dwellings, or in the Ivy against the walls of buildings, or in holes of trees—in fact encourage them everywhere, there would be less injury done by this pest than at present.

NAMES OF PLANTS (*George Lovewell*—Amsterdamer Botraplan, the Snowy Mountain. *W. F.*—The shrub is *Berberis*, the other flower *Arabis alpina*. (*Rev. E. S. D.*)—*Lencoum astratum*, the Summer Snowflake. If you write to Mr. Webber, Central Avenue, Covent Garden Market, he would, perhaps, be able to answer the question you submit. (*Bright*).—A double form of some Anemone, probably *A. coronaria*; *Viburnum Tiana*, (*S. H. K.*)—The Begonia is probably a variety of *variegata*. The Selaginella we cannot determine. (*S. O.*)—1, *Lotus Jacobine*; 2, *Convolvulus Cuscorum*; 4, *Hovea* sp.; 5, *Hormannia* sp.; 6, *Tecoma* sp. (*Subscriber, Belfast*).—Apparently a species of *Anoda*. (*W. Wynne*).—*Phragmites communis*. (*H. K. S.*)—5, *Carydalis solidus*; 8, *Saxia coccinea*. The others are florists' varieties. (*Old Subscriber*).—*Ribes aureum*.

POULTRY, BEE, AND PIGEON CHRONICLE.

REMARKABLE RECOVERY OF A POLAND COCK.

We do not profess to be Poland breeders, still we have bred a few, and with the chickens which we have brought up some of the chief prizes of the year have been won. The accompanying account has, however, been a source of wonder to so many, that we think it may be interesting to others. All who have cultivated the breed to any extent will probably have experienced at some time or other the misfortune of a bird going wrong in the head. This usually happens to the best birds, for it is those which have the largest crests which generally meet with this trouble. A slight knock against the top of a basket or the top of a pen will often bring on this giddiness in the head, and then the bird generally loses by degrees all power of holding the head up. Some birds we have known of from the very weight of their crests, seem to have been overpowered and unable to keep erect or to walk properly. When this happens, if the bird is wanted for breeding, it is sometimes of use to cut the crest off, but this must be done in a very early stage, or the bird will generally be soon past any remedy; or if the bird is required for the show pen we have heard that a skull cap with an elastic band run in the hem to keep the cap close to the head has been found of use, but this remedy again must be tried, we are told, as soon as the bird is first affected. The symptoms appear to be generally the following:—The bird first does not seem to be so clear in sight, and runs up against the sides of the pen, and makes futile attempts to pick up its food. It then gradually appears to get worse, and often giddiness follows and the bird will run round. Next it seems to lose the power over its head altogether, and falls right over. In this stage any remedy is generally hopeless, and the bird comparatively becomes useless.

We will return now to the bird we have before mentioned, which after many months' illness suddenly recovered. It is a White-crested Black Poland cockerel, and was hatched in early April. He was most promising and the pet of his breeder. He thrived marvellously, and last season figured successfully in the chicken classes of Newbury, Bath, Weymouth, Warminster, &c. The bird improved rapidly, and in due time was entered for the Ipswich show. All of a sudden five or six days before the show he appeared to be giddy; he became worse daily, and a skull cap such as we have described was placed upon his head. The owner only had two cockerels sufficiently matured in plumage for the show, and one of those was this ailing bird. As we, however, proposed to remain at the show all the three days we took the bird with us at the owner's wish, on the chance of his being able to stand in his pen. When we reached the show the bird could not stand, and held down its head as if its neck was broken. We now would ask all who saw the bird at Ipswich to remember how bad it was then. It should have gone into pen 252, if our memory serves us right, but as he could not stand his mate alone was penned, and he had to be put in his basket. Messrs. Raynor, Fearnley, and many others will remember the case well, and how the bird had to be fed by hand, and that several fanciers said it would be a kindness to kill the bird and end his misery. On September 29th we left Ipswich with the bird and took him back to his owner. From that day for about three months he had to be fed by hand, and never tried to pick up a grain of the ground without falling over on his back. It was such a pet, however, with the owner, that he took it away with him when he left home for a month, and fed it

entirely by hand. About the middle of December it partly regained the use of its legs, and though it moved about better, still its head was bent down as if its neck was quite broken, and for thirteen or fourteen weeks more the bird seemed in a most pitiable state. We urged on the owner to kill it, but he still refused to obey the chicken which had done such good work at the early chicken show, and he was most certainly remarkably good in all the required exhibition points, and would, had all gone well with him, probably have made his mark at the great exhibitions.

On April 19th last we again went to see our friend's Polands. In one pen we saw a bird we did not remember to have noticed ever before. "What bird is that there?" we inquired. The owner smilingly replied, "Why, that is the lunatic." We could not believe it. "The bird was strutting about as grandly as possible, looking lustily, his head erect, and his crest, which had been washed, looking capital. A few days before, while the birds were being fed, he most unaccountably lifted up his head, which had been hanging down for six and a half months, and began to pay attention to the hens and to crow lustily. This is the most marvellous recovery which has ever come under our notice.

To account for the recovery we can only think that the brain was in some way affected, and that by "Time's wonderful working" the affection cleared away and the bird became restored to health. We do not doubt but that any further particulars of this Poland's recovery which we may have omitted to mention will be given on application to the owner, Mr. Thomas Norwood, Church Field, Salisbury. We have, however, mentioned the subject thus fully here as being one of peculiar interest to all Poland breeders.—W.

CANARY BREEDING.

In further quoting Mr. Hervey's remarks respecting Canaries and their eggs, the writer says:—

"When your hens have laid their first egg it must be taken away immediately, and an ivory one put in the place of it to amuse them. You must not put in old addled eggs, as most men do, which often break in the nest and infect it, and the ill scent may make the old birds sick. Take away also the second egg and add a second of ivory, and do the same at the third and fourth. When you perceive the hen is like to lay no more return her own eggs very early in the morning, taking away the false eggs of ivory. Do this at every sitting, for should you leave the hens their eggs and not take them away they would hatch at several times, and the first young birds hatched being stronger than those which would come two days later, would take all the food from the hen, and would stifle the last comers, or scratch and disturb them with their claws.

"A hen must have laid her egg by seven o'clock in the morning, or eight at the latest. If she stays longer it is because she is sick, and if you perceive it she must then be helped, as has been said before. Some are apt to notice that of four or five eggs found to be good, by looking through them on the seventh day the hen had been sitting on them, very often only two of them will have hatched. That accident may proceed from several causes. The first is sometimes the often handling of the eggs whilst the hen is sitting, which cools them so much that the young in them take no nourishment, and that hinders their thriving; or else it is because those eggs being so often handled get some little crack which is imperceptible, and if ever so little air gets into the egg the little one in it dies immediately. This frequently happens to those who are but newly used to Canary birds, for they being novices think everything so fine and wonderful that their hands are as busy as their eyes. To avoid this misfortune the eggs must be touched but once, that is the day when the addled ones are to be taken away, leaving the hen and her eggs to themselves after that.

"An accident may also be occasioned by their places ever being too many eggs to sit on, by changing the hen, which, having sometimes trusts one from under her, which grows so cold and remains there so long unobserved, being hid under the end of her wing, that the young one in it takes no more sustenance, and consequently comes to no good. This is the only occasion you must take to touch the eggs, putting that you find cold in the middle of the others."

The foregoing valuable hints are not only worth studying by learners, but even those more experienced in the fancy will be none the less wise in their knowledge of Canary treatment if they let their breeding birds remain as much undisturbed as possible during the nesting period. I advise this as a rule. As a substitute for ivory eggs recommended by Mr. Hervey, I would prefer them made of wood, for the reason that they are not so weighty as ivory or bone, and not so likely to sink in the nests. For many years I have used wooden eggs (cleverly made by a wood-turner), but only in cases where I find a hen begins to sit close after laying her first or second egg. I will here draw attention to a remark of Mr. Hervey, who says, during sitting "the eggs must be touched but once," but further

on in the chapter in referring to an egg becoming cold through being thrust from under the hen, he says, "This is the only occasion you must take to touch the eggs." In general Mr. Hervieux's remarks are good, but it is impossible to lay down a plan whereby all Canary fanciers shall be guided alike in the treatment of their cage pets, particularly during the incubating period, owing to the varied temperament of their birds. Actual experience is the best schoolmaster.—G. J. BARNES.

LIGURIANISING.

I FANCY some of my readers will smile when they see my name attached to a letter under the above heading, for it is well known that I keep bees for profit, and believe that the common English bee is not inferior in any way to the Italian bee, or any other sort yet discovered. Some people think differently, and others who do not believe in the superiority of Italians are anxious to possess and try them. My object in this letter is merely to remind those who mean to introduce Italian queens to their hives that the best and most economical time of doing so is a day or two after swarming. The old stocks then have no queens arrived at perfection, only some in egg or embryo in their cells. A common English queen in a state of fertility is well worth 6s. or 6s. to introduce to a hive that has sent off a first swarm with its queen. Such a fertile queen would commence laying at once, and thus keep the combs well filled with brood, and thus the hive would soon be ready for swarming or for filling supers. If the hive was left to rear queens about three weeks would pass before one of the young queens would commence laying. The reader will see at once what an advantage it is to introduce frequent queens to hives that have just sent off first swarms. If I intended changing my breed of bees, and could purchase queens of the sort wanted, I would do so shortly after swarming. Italian queens should be spoke for beforehand, to be sent at the swarming season. If swarms have not come off naturally they could be taken off artificially.

Much has been written and spoken about queen cages and the best mode of introducing foreign queens. Experience is the best teacher, and those who have been engaged in this work are the safest guides to follow. I have been successful in uniting strange but common English queens to English swarms, not having tried my hand with Italians, but have always fancied that Italian queens could as easily be united to common bees, and that without the use of queen cages. When a queen is removed with the first swarm from a hive artificially the bees left behind search for their lost queen. In this condition they receive an English queen readily, and with tokens of gratitude. Will they receive a foreigner in like manner? I think they would; but if they would not, I would drum or shake them into an empty hive and place it some distance from the old stand in the same garden. Meanwhile I should set the foreign queen at liberty amongst the combs of the stock hive, and place it on the old stand. The bees in the empty hive would soon be in a state of concern and uproar about their queenless condition, and ready to return to the old hive, and would speedily go back with the feelings of trespassers and poachers. Bees thus treated are never disposed to fight or dispute terms. Foreigners could, in my opinion, thus be successfully introduced to swarms as well as stocks. When bees lose a queen in a stock hive, or have with combs in it, they do not abandon the combs and settle; but if the bees be driven into an empty hive they will not settle or stay in it, and invariably fly back to the old hive or place. If this ideal is well understood by a bee-keeper who can easily and readily handle his hives, the practice of uniting swarms and queens to swarms will shape itself in various forms, and be generally successful.—A. PERTHORE.

TOADS EATING BEES.

If this fact needs any further proof the following may not be uninteresting. A year or two ago our bees were, many of them, caught by a summer shower. Making their way back to the hive they crowded the entrance, to the apparent annoyance of those within, which seemed to dislike having so many "damp unpleasant bodies" at their door. Several wet bees fell on the ground, and I made matters worse by clearing away some of those which were blocking the passage, where some seemed as anxious to push out as others were to push in, consequently there were a good many wet bees crawling on the ground unable to fly up. In a very short time there appeared three hungry toads, which we watched with much amusement if not with complete satisfaction. A toad would crawl up within an inch or two of a bee, and wait for it to move (this appeared to be a fixed rule), then as soon as the bee stirred the toad's mouth opened and shut quick as lightning, and the bee was seen no more. We were never able to see the toad's tongue, with which we supposed he licked or lapped-up the bee; but that the bees disappeared down the toad's throat there could be no question, and this happened again and again, the toad's

voracity being tremendous. Moreover, the exceeding promptness with which they appeared on the scene, evidently from lurking-places close at hand, leads one to suspect that this was not the first time our toads had had such a feast, which indeed M. Brunet's experience strongly confirms.—F. M. MILLARD, Otham, Maidstone.

OUR LETTER BOX.

CHICKENS DYING (S. Lockyer).—The variable weather and exposure to cold kills them. They should not be allowed to go out until the middle of the day, and then only when fine.

CATCHING A QUEEN BEE (G. S. B.).—The best way to catch the queen out of an ordinary straw hive is to drive the whole population into an empty hive, then to dash the bees out on a cloth or on a gravel walk, and hunt for the queen. If, when the bees are shaken out, the empty hive be placed within a few inches of them, raised up a little on one side, the insects will soon begin to creep in that direction. Then is the best time to look out for the queen. She may be caught by putting a wire glass over her and gently slipping a bit of perforated zinc under the glass, taking care not to crush her majesty, unless it is desirable to destroy her. The queen of a swarm may be caught in the same way.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.				Rain.			
	Barom. at Sea Level.	Hygrom. Level.	Direction of Wind.	Temp. of Sun at 1 foot.	Shade Tem- perature.	Radiation Temperature.				
April and May.	Dry.	Wet.		deg.	deg.	deg.	In.			
We. 25	29.899	48.2	49.3	S.E.	45.2	66.1	84.8	106.6	86.2	—
Th. 26	29.992	48.1	49.7	N.	45.3	64.0	81.0	81.5	84.1	—
Fri. 27	29.994	47.7	49.1	N.	44.6	64.8	87.1	105.2	84.2	—
Sat. 28	29.912	46.0	49.0	N.	46.1	51.4	41.7	65.8	41.2	—
Sun. 29	29.818	47.1	44.0	N.	45.2	64.1	59.4	69.8	59.0	0.012
Mo. 30	29.929	44.5	41.6	N.W.	44.4	61.1	41.1	108.2	40.9	—
Tu. 1	30.361	43.8	39.0	N.	45.7	60.1	87.2	86.0	86.1	—
Means	29.992	45.8	41.8		45.4	63.8	88.2	89.4	87.3	0.012

REMARKS.

- 25th.—A bright pleasant day, rather less so in the after part, but fair all day and a moonlight night.
- 26th.—Fair though dull all day; very fine night.
- 27th.—Clear and dull all day.
- 28th.—Dull cold morning; no sun all day, but rather warmer at night.
- 29th.—Dreary but fair and rather less cold all the forenoon; slight rain between 3 and 4 P.M. and at times after.
- 30th.—Rather dull till 1 P.M., then bright for an hour or two but dull after, though fair; rather less cold in the morning.
- May 1st.—Another dull grey day, occasional gleams of sunlight and a bright sunset.

The temperature though steady is very low, lower than last week, and considerably lower than the first week in January.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 3.

Our market is now well supplied with most kinds of early fruit, such as Peaches, Figs, Grapes, and Strawberries, also Cherries from the south of France, all of which are making fair prices. Business steady. Forced vegetables are in good demand at improved rates. The first green Gooseberries have put in an appearance.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	per	doz	6 to 7	Nectarines.....	dozen	0	10 to 0
Apricots.....	dozen	0	0	Oranges.....	per	100	8 to 12
Cherries.....	dozen	0	0	Peaches.....	dozen	18	0 to 20
Currants.....	dozen	0	0	Pears, kitchen.....	dozen	0	0 to 0
Black.....	dozen	0	0	Pears, dessert.....	dozen	8	12 to 0
Fig.....	dozen	12	0	Pine Apples.....	dozen	0	0 to 0
Filberts.....	lb.	0	0	Plums.....	per	100	0 to 0
Cobs.....	lb.	1	0	Quinces.....	bushel	0	0 to 0
Gooseberries.....	quar.	0	0	Raspberries.....	lb.	0	0 to 0
Crabs.....	dozen	1	0	Strawberries.....	dozen	0	0 to 0
Lemons.....	per	100	6 to 10	Walnuts.....	bushel	5	8 to 0
Melons.....	each	0	0	ditto.....	per	100	0 to 0

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	dozen	0	10 to 0	Mushrooms.....	pottle	1	8 to 2
Asparagus.....	per	100	4 to 8	Mustard & Cress	punnet	0	0 to 0
Beans, kidney.....	dozen	1	6 to 6	Onions.....	bushel	0	0 to 0
Beet, Red.....	dozen	1	8 to 0	pickling.....	quart	0	0 to 0
Broccoli.....	dozen	0	9 to 1	Parsley.....	doz.	0	0 to 0
Brussels Sprouts.....	dozen	0	8 to 0	Peas.....	dozen	0	0 to 0
Cabbage.....	dozen	1	0 to 2	Peas.....	quart	6	10 to 0
Carrots.....	dozen	4	0 to 8	Potatoes.....	bushel	3	8 to 4
New.....	do.	1	6 to 2	Kidney.....	do.	6	0 to 6
Campion.....	per	100	6 to 6	New.....	do.	0	6 to 1
Cauliflower.....	dozen	2	0 to 4	Radishes.....	doz.	0	1 to 1
Celery.....	dozen	1	6 to 3	Rhubarb.....	bushel	0	6 to 1
Cress.....	dozen	0	0 to 0	Spinach.....	dozen	0	0 to 0
Cucumber.....	each	0	1 to 6	Spruce.....	bushel	1	5 to 0
Endive.....	dozen	1	0 to 2	Seakale.....	basket	1	5 to 0
Fennel.....	bunch	5	0 to 0	Sisal.....	dozen	0	0 to 0
Garlic.....	lb.	0	8 to 0	Spinach.....	bushel	3	4 to 0
Herbs.....	bunch	0	2 to 0	Turnips.....	bunch	4	0 to 0
Lettuce.....	dozen	1	0 to 0	New.....	do.	0	0 to 0
Leeks.....	bunch	4	0 to 0	Vegetable Marrows.....	do.	0	0 to 0

WEEKLY CALENDAR.

Day of Month Week.		MAY 10—16, 1877.		Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
		Day.	Night.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.		
10	Th			61.9	49.1	5.0	4 17	7 55	2 52	4	20	27	3 47
11	F	Royal Society at 8.30 P.M.		62.1	49.8	5.1	4 16	7 57	3 5	6	0	28	3 49
12	S	Crystal Palace Summer Show.		62.9	49.6	5.0	4 14	7 58	3 20	7	23	29	3 51
13	SUN	SUNDAY AFTER ASCENSION.		63.6	53.1	5.9	4 13	7 49	3 42	8	47	30	3 51
14	M	Royal Geographical Society at 8.30 P.M.		63.2	49.4	5.1	4 11	7 41	4 14	10	7	1	3 52
15	Th	Royal Horticultural Society—Fruit and Floral Com.		64.8	49.6	5.2	4 10	7 43	5 0	11	14	2	3 52
16	W	Ri. Botanic Society—Summer Show. (mittees at 11 A.M.)		65.2	42.5	5.5	4 8	7 44	6 5	morn.	3	3	53

From observations taken near London during forty-three years, the average day temperature of the week is 63.5; and its night temperature 41.8°.

AURICULAS.



It has been a source of much grief to me to read of the recent disasters occurring to our most eminent growers of Auriculas. I think it a very easy matter to avoid such disasters, and as "England expects every man to do his duty," I will, by your permission, describe to my brother florists my mode of potting this queen of spring flowers, for on that operation success mainly depends.

First, I place the pots in ordinary drainage; on this I lay a second course of drainage until I have entirely hidden the large pieces with fragments varying in size from a large to a small pea. On this I lay sound dry leaves, avoiding as a deadly foe every kind of fibre which I formerly used. When these leaves are crushed firmly down I find my pot filled to one-third; on this I sprinkle an even layer of small charcoal, and on this I spread the roots of my plants, but if the top root is too short for this purpose I resort to a smaller pot. I then put in number one compost, which is leaf soil, small fragments of charcoal and potsherds, and sandy loam in equal parts, never forgetting three or four tough dry leaves rolled up so as to maintain cavities, which always induce sensitive young roots, particularly so when a little washed grit is added. In potting I allow space for 2 or 3 inches of top-dressing of number two. This number two consists of old cow dung and adhesive loam in equal parts, with a little washed grit or rough clear silver sand.

I may add a word as to the purity of these composts. I should as soon think of eating my dinner raw as to administer uncooked food to my Auricula plants; or, in other words, I take advantage of the hottest weather to spread my compost on boards until every particle of moisture and apparent insect life is dried out of it; I then store it in a dry outhouse until wanted for use. If I find myself short of ingredients so prepared I thoroughly dry more soil before a good fire, and pour boiling water over the old cow dung in sufficient quantity to thoroughly purify the same, taking care not to waste the liquid, but adding the dry loam to absorb it.

In case of special treatment of the delicate growers I use charcoal solely for drainage, and lay two or three very firm and adhesive lumps of leaf soil (provided it is perfectly sweet) on the roots of the plants before putting in the usual compost; for when the roots take hold of this and the charcoal it is not a little drought that will cause the plant to droop, and thereby hangs a tale, for it is by withholding water that I obtain a firm texture of foliage; moreover, a thirsty plant will absorb in large quantities, while a plant in a continual state of saturation can take in little or no food to sustain it.

Now, as to liquid manure. If I had written the word twenty years ago it would have been only to register my disapproval of it; but I find that plants potted as above described will fare the better for three or four doses during the blooming season of clear liquid manure made

by pouring boiling rain water over a sufficient quantity of old cow dung, stirring well, and using when cold and pretty clear.

I am sorry to find that any grower should talk of abandoning all dungs for pure loam, for it was written long before Privateer was raised that a good compost was the life and substance of the Auricula; and I find by taking two plants of the same variety and top-dressing one with pure loam and the other with a mixture of cow dung and loam, that the first perceptible difference in the two plants is that the one in the cow dung will soon throw off a delicate fragrance from the foliage; and another more important advantage is that the mixture gives me larger flowers of greater substance, deeper in velvet, and far more dense in paste.

This, Messrs. Editors, is my system, and if you or any of your readers should be crossing the rural end of Cannock Chase you may see the result of it; for here my plants have stood ever since last May open to all weathers, deeply shaded by a north gable where not a ray of sun can touch them, yet all now seeming to laugh in luxuriance. This I do not mention as any part of the culture, but results from inability owing to protracted illness to give them more approved treatment. And here I would remark upon the evil of standing the pots upon the ground, or in any way plunging them. Hardy-grown plants will do very well on slates or tiles for awhile where the grower has not facility to keep them all staged with the lights off.

It is many years since "D., Deal," informed me that I had something to learn if I intended to grow the Auricula, which I have found to be perfectly true to my cost, although both my father and grandfather were growers. But the first thing I learned in the preparation of soils was that particles of decaying wood in a heap of compost lying on the ground would breed white threads, and these white threads in their turn would breed the perfect fungus; and, moreover, these white threads are most destructive to many soft-rooted plants, as I have proved by experiment both within the precincts of a pot and in the open border. But all difficulties have long been overcome, and my hospital treatment for the Auricula will rally a plant when very little vitality remains in its circulation. This treatment, not yet described, I always submit my new importations to, come from what grower soever they may. If you think proper to insert this record of my practice in your pages it is possible someone may give the system a trial. Some growers may be unable to obtain leaf soil, in that case I advise the use of sandy loam and an increase of the charcoal. Again, others may be found to say that they cannot obtain the charcoal. This difficulty may be soon overcome. Lay sticks upon a slow fire, and as they assume the appearance of red-hot bars take them out and immerse them quickly in a vessel of water, plunge them suddenly, or the operator will inhale a very irritating vapour. A large part of broken fragments will sink to the bottom of the vessel, and here may arise a danger, as a large portion of this is alkali, and is as destructive to this sensitive plant as the carbon is fertilising; it should

therefore be washed through a sieve or otherwise. And now, Messrs. Editors, I think I have "done my duty" in the best way I am able.—S. W. BULLOCK, *Brocton, Stafford.*

[You have done it well. The only sentence we regret is—"the hospital treatment not yet described." Pray describe it.—Eds.]

FORCING OF THE FIG TREE IN POTS.

If there is one branch of fruit culture that I prefer to another it is that of growing fruit trees in pots, and especially those of the Fig. I do not intend to take up the subject of Fig culture generally, because that has several times been done, but shall confine my remarks to forcing the tree, as I believe that many persons would be induced to practise it if they knew it could be done successfully. Some people have houses built especially for the Fig, and by planting out obtain excellent crops. I write, however, now to those who have a vinery with a pit in it so as to afford a little bottom heat, which the Fig much enjoys. One of the most successful modes of growing Figs in pots that I have practised has been the following.

When a vinery is all in readiness for commencing forcing the pit is filled up with heating material previously prepared. It consists of cow dung with the straw in it, and horse dung the same, fresh from the yard. All is mixed together and fermented for a time, so that the rankness may pass off; but the cow dung not heating violently soon modifies the other, so that it is not long before the whole is fit to place in the pit. When this is done the manure is again well mixed and made firm all over the bed, so that the sinking may go on as evenly as possible. While this is lying in the house the plants should be potted.

My practice has been to grow them in No. 8-sized pots as being easily moved, and they will grow trees of good size year after year. The plants were brought from their storehouse, which was generally in a dry place but cool, and the pots were always covered with litter through the winter. When taken out of the pots the drainage was taken out, and as the Fig is a very vigorous-rooting tree one can imagine that there was a ball of roots matted together in all directions. These were chopped off with a chopper kept for the purpose to within 3 or 4 inches of the stem all round. The plants were grown on single stems to about 10 inches above the pot. The balls when ready for potting would be about 7 inches across and 8 or 9 deep, for they were cut off square at the bottom. The pots were well cleaned and drained with large crocks covered over with some fibre shaken from the soil. The compost was composed of turfy loam two-thirds and the rest very much decayed manure; no sand was added.

When potting the ball was placed just low enough to admit of its being covered with an inch of soil, which was rammed-in as firmly as possible; and by so doing the soil had to be in a proper state—I mean not wet, but free, open, and moderately dry.

The rule practised was to dress the trees the same as the Vines with a mixture of sulphur, soft soap, and clay. After potting the trees were stood on the floor of the house for a few days, and then for a few days on the bed, and next they were partly plunged in it; and if all went well they were finally plunged when all fear of too much heat had abated. This plunging had to be very carefully done—every pot placed level, and the manure packed closely under the rim of the pots, so that the heat should rise regularly. The roots had water within a day or two after potting, but they did not require much till they had begun making fresh roots, but the branches were regularly syringed three times a day. Under good culture there were two crops a year, the first from that in embryo on the previous year's wood, and the second from that of the current year's growth.

Watering is very important in the culture of Figs in pots; they always want plenty of it, especially when the pots become full of roots, and, in the height of their growth and fruiting, manure water three times a week. The growth was generally stopped when about 6 inches long, but none less than that, which soon caused young fruit to appear at the axils of the leaves. The young fruit must be watched, or it sometimes happens that instead of swelling it turns yellow and drops off; so that a moderate temperature at first, plenty of moisture, and an early inducement to root-action are the principal points to study in the early stages, for a neglect of watering even for a day sometimes will cause the fruit to drop.

Before the season is out a top-dressing is needed, as the roots will be up on the surface: let the same sort of soil be

used for this as for potting. And, again, it must be expected that they will root vigorously through the bottom and will spread all over the dung bed, so that when this is found to be the case the bed itself must be watered, but with only clear water, as they will be rooting in a bed quite rich enough. I have not practised this mode of Fig culture for some few years, but can recommend it strongly to those who have the little convenience and pay the necessary attention as above described. I was taught this plan by a Scotch gardener and practised it for several years under him, and the crops varied very little from time to time. The sorts were the Brown Turkey and White Marseilles.

A great enemy to the Fig is the red spider, which comes on generally when the leaves have made their growth. This pest spreads with astonishing rapidity if the atmosphere and the roots are allowed to become dry both at one time. The brown scale also is pretty certain to find its way on the leaves, and will establish itself on the wood as well if not picked off.

The trees were allowed to remain in the vinery till the leaves turned yellow and were ultimately removed to other quarters, but with plenty of light and air. Probably the Fig will do with less heat than the Vine; but it thrives so well it started at 45°, rising by stages as with the Vine up to 70°, that there is no need for making much difference.—THOMAS RECORD.

THE AURICULA APHIS.

FOLLOWING the suggestion of "D. Deal," in a recent issue of the Journal I took up to London an Auricula with the living woolly aphid to Mr. Murray, the Secretary to the Scientific Committee of the Royal Horticultural Society. He writes me word—"Your Auricula blight insect is very close, if not identical, with a species named *Trama radialis* that has been found on the roots of *Helianthemum*, the Jerusalem Arti-choke, and *Crepis biennis*. . . . I do not find any notice of woolly stuff on *Trama radialis*, and it may be that this is new."

I had previously found that our Auricula enemy was specifically distinct from the Apple aphid, so no one need fear mischief from the contiguity of their Apple trees. The Apple aphid no doubt has sins enough of his own on his shoulders without being blamed for the sins of his neighbours, and I would not leave even an enemy under the shadow of an unjust aspersion, especially as clear facts are wanted to grapple with our foe. In external appearance the two species are quite different. The Apple aphid is rough and blackish, the Auricula aphid sleek and yellowish white; and though these differences of colour may be sometimes modified—and colour alone in an insect is seldom to be relied on—there are other structural differences which become apparent under the microscope.

The point of resemblance which first attracted me, before I had the two side by side for comparison, was the woolly substance which each species produces. This forms a blanket-like covering and protection for the perfect insect, and also possibly an aerial but haphazard means of locomotion for the male insects to float, Thistle seedlike, in search of fresh fields and pastures new before the summer breeze enveloped in his fleecy balloon.

It was with great regret that I found at the recent Show on the 24th ult. at the Crystal Palace that "D. Deal," was prevented from competing owing in a very material degree to this pest. The plant he brought there for inspection had apparently been infested; there was the blanket covering to the roots—sadden and stale—but no insect, as though the enemy had been there and decamped, for neither I nor others who searched could detect any sign of him.

The loss sustained by "D. Deal," is so serious that no one can well depise the enemy; but I cannot help thinking he must not have observed have done most of the mischief in the autumn months, and that its effects did not become apparent till spring treatment, and the call of the plants upon their spring energies found the roots sapped, eaten, and decayed.

I am surprised to find how little my plants have minded the vigorous treatment I gave them in February. I followed Mr. Horner's advice—reported and washed root, stem, and foliage of all my affected Auriculas, and have not lost one, though I destroyed thousands of this woolly aphid, and cannot now find a single specimen, and my bloom is better than I have ever had it, but few plants protesting by giving me one, two, or three pipes only, while in growth they are correspondingly vigorous and strong.

The fact that an aphid attacked the roots seemed known to

several growers of Auriculas, and I trust that by attention and watchfulness against the first appearances of its insidious attacks it may be prevented getting established so as to become dangerous.

Watch must periodically be kept by turning the plant out of its pot, for the woolly white blanket is apparent enough during the period of the insect's existence, of which I have as yet had experience.—JOHN T. D. LLEWELYN.

KITCHEN GARDEN NOTES.

CARROTS AND WORMS.—The Carrot crop is rendered useless in many gardens by grubs eating into the roots. This takes place in many well-managed gardens, as I saw Mr. Douglas complaining of it the other week. The best remedy that I have tried was to scatter a quantity of soot and lime over the surface of the ground before forking it over for the Carrots. This works it into the ground, and keeps the soil free from all sorts of grubs for the whole season. As many may have their Carrots in before this time, and will, therefore, not be able to adopt this plan, the next best way of applying it is to sow the lime and soot between the rows and hoe it into the ground.

EARTHING-UP.—All kinds of Greens and Potatoes are greatly benefited by being earthed-up. Some never think of drawing the soil to the stems of any plants until they are beginning to bend over with the weight of the head, but they should be earthed-up long before then, and the earth should not all be drawn to them at one time. Potatoes should be earthed-up when the stems are not more than 3 inches high; and all kinds of Greens should have a little earth pulled to their stems shortly after they begin growing in their permanent quarters, and the final earthing-up need not be done until they are considerably advanced in growth.

PLANTING IN DRILLS.—As few of the winter greens and the generality of the late autumn crops of these will not be planted yet, it will be found very advantageous to draw drills about 3 inches deep (as if for sowing seed), and plant in these. This plan lets the roots well down into the ground—a great advantage in dry weather. The plants can also be much easier and much better earthed-up when the stems are short, and the leaves near the surface of the soil, than when the plants have only a slight hold of the earth.

BETROOT CULTURE.—Best if sown earlier than the last week in April, and the summer subsequently prove dry, is in great danger of running to seed, and when this occurs, although the roots still retain their original form, they lose their juiciness and flavour. Beetroot may be grown side by side with such crops as Carrots and Parsnips, so far as depth of soil is concerned, but the Beetroot delights in a cool, open, moist, not sandy soil. It may be sown on ground that was occupied with Potatoes last year, or if it could be placed exactly over where the last year's Celery bed it would do capitally. In this case it would not be necessary to trench the ground to the depth of 18 inches, but otherwise it should be turned over to this depth; and the manure which is worked-in with the soil at the same time should be decayed cow dung and not decayed leaves, as this kind of manure has a tendency to make the roots branch and throw out a number of small fibres, which they should not do, as the best roots are always those which are as free from roots as a gun barrel.

When the ground has been turned over roughly do not fork it before sowing the seed, as this would turn up the manure, which should be kept well down. Smooth the surface with a Dutch hoe, but do not do this unless on a fine day, when the soil is dry and powdery, and after breaking the surface the drills may be drawn at once. They should be from 15 to 18 inches apart and about 2 inches deep. One seed every 3 inches along the drill will be sufficient. Cover over with the rake and then lightly hoe all the surface over again, and leave it like this until the plants appear in the rows, then run the hoe between them, and as soon as the young plants are about 2 inches high they may be thinned out. If a plant has come up from every seed take every alternate one out, and this will leave the crop 6 inches apart, which is a good distance for growing them.

Hoeing between the rows to keep the surface open and free from weeds is the whole of the attention the crops require from the time of thinning until September, when they will be ready for taking out of the ground, and then they must be dug out whole and not be drawn in two or three pieces, for the roots should never be broken or injured in any way. Cut the top off 3 inches from the crown. Lay the roots in a shed to

dry, then store them in a cool shed or cellar amongst dry sand, where they will keep fresh and fit for use until about the time the next crop comes in the following autumn.—A KITCHEN GARDENER.

STIGMAPHYLLON CILIATUM.

OLD plants as well as new are worthy of having their merits recorded, hence I direct attention to this attractive stove plant. It is only met with occasionally, but its cheerful yellow flowers and pleasing foliage entitle it to a place in our stoves. It is an evergreen perennial, and was introduced from Brazil towards the close of the last century. Its habit is somewhat trailing, hence it requires some training; but it never looks so well as when growing against a wall and not fastened too closely. In such a position I have seen it much admired during the summer months, its flowers being almost as "bright as a Buttercup." It is easily cultivated, requiring only a mixture



Fig. 43.—*Stigmaphyllon ciliatum*.

of loam and peat, and frequent syringings, to prevent red spider attacking it. Cuttings of half-ripe shoots strike tolerably freely if inserted in silver sand and protected with a bell-glass. It is sometimes called *Banisteria ciliata*. It commences flowering in April, and continues growing and flowering for many weeks. Its sprays are pretty for associating with other out flowers in furnishing vases, but they do not endure long when severed from the plant. It used to be grown in one of the stoves at Wimbledon House, but I am not aware if it still remains in the collection there. Possibly it does, for it is a good old plant, and not likely to be thrown out of a garden where plants are cherished.—J. P. S.

SEAKALE.

Now that the time has come for planting Seakale a few hints as to the successful cultivation of this, one of the most useful of vegetables, may be acceptable. Seakale is not only generally esteemed, but it may be had in use for a long period, say from the end of November till the middle of April. It is, perhaps, more useful in April and early May than in November, for very often vegetables are scarce during the late spring months, especially after a hot and dry summer like the last, when the staple crops for winter and spring use made such slow progress, but Seakale grew satisfactorily.

I will now briefly describe the mode of growing Seakale which is practised in the London market gardens, and which I have found very successful. In taking up the roots early in November for forcing, all which are intended for this purpose are laid in cocoa-nut fibre or ashes, and are introduced into heat as required. When the roots are taken up pieces of them are selected about 4 inches in length and of medium thickness, taking care to have them as near one size as possible, as that is important to ensure an even crop. When the sets are all out they are covered over in a warm corner with ashes or cocoa-nut refuse, and are left there until the following spring. About the end of March they will have begun growing; they are then planted in well-manured ground in rows 18 inches apart and about 1 foot from set to set in the rows, just covering the crown. By leaving the sets until they have sprouted it is easy to tell the proper end to leave on the surface, otherwise it would be impossible to plant without making mistakes: hence irregular crops. In taking up the roots in autumn every third row is removed, leaving the remainder in the ground for late use. There will be found just enough soil in these openings to properly "land" (as it is termed in the market gardens) the other rows or beds. This earthing is done at twice, one batch being covered about the middle of February, and the other as soon as the crowns are seen to begin growing, covering the crowns with about 9 inches of soil. The result of this I have found to be—Kale stouter and sweeter than that obtained by artificial forcing, and the supply throughout the month of April is very valuable.

When this batch is done with the roots are taken up as before, and sets are made in the same manner. These sets are usually ready for planting from the 5th to the 10th of May, and they generally grow more freely and make as good crowns as those selected in the autumn. I consider this plan of growing Seakale to be far better than that of leaving old stools in the ground year after year. It is important when the crowns are first starting into growth to water them during very dry weather, which sometimes occurs in May, as it is then that the crop is most liable to injury from drought.—*J. P. M., Fulham Fields.*

THE ROSE IN ENGLAND.

YOUR *Journal des Roses* awakens in the gloom of the year the odours that time had crushed, and restores the sunshine that fills the world with floral beauty. Although Nature may be still stern and deaf to our entreaties, the book that speaks of Roses has a creative charm, for at its bright suggestion fancy fills the heart with flowers, amidst which the Rose sits enthroned as queen, glowing with a life that is truly immortal. The ages have consecrated the Rose to beauty and love, and in this day of toil and care it is the symbol of rest and heart-ease to thousands who can find no recreation so sweet, so wholesome, so homely, as the cultivation of the garden and enjoyment of its fragrant flowers. When our English amateurs become acquainted with your charming work it will be one of their most cherished companions, for it will be an addition to the associations that connect the garden with the fireside, and link the love of the Rose with the most blessed of the domestic affections.

We need not make a special claim upon the Rose as ours, for if we truly honour it we must be unselfish and rejoice that many revere it besides ourselves. But we may be proud that it is England's flower, that it twines with the Thistle and the Shamrock in the trinity of powers that sustain the crown as the representative of our unity, liberty, and national life. It has represented strife and tumult and wrong in the dark days when the people were the sport of factions and the victims of ambition, but even then it suggested and even aided the better day that would dawn; and we talk now of the white and red Roses with a sense of thankfulness that our domestic life has grown so large that there is no longer room left in these isles for the development of the passions that have made our history not less sad than heroic.

Thus we are in duty bound to the Rose, and when your brethren (who, as rosarians, are also our brethren) send us intelligence of the new varieties they have secured, we throbb with new ecstasies, and our peace seems to be indissolubly associated with the flowers of the future, which, in the course of the season, are destined to become the flowers of the past. The demand for new Roses in this country exceeds that of any other flower, as the demand for Roses of all kinds, new and old, is everywhere the largest item of the business of a trading

florist. In the "Garden Oracle" for 1877 there are described thirty-eight new varieties of Roses, all the produce of French industry and reflective of French taste. They will all be wanted by our amateurs. They delight to buy them, although they know that a certain proportion will disappoint them; for new Roses are like new flowers of all kinds in this respect—that however carefully the traders select for us we must finally select for ourselves, and the public exhibition is the sifting and sorting machine through which finally they must pass or suffer to be set aside. Those who do not themselves exhibit or even visit exhibitions are guided by the formal decisions of those who arbitrate in these contests, and there is no better tribunal of public taste. We do occasionally hear amateurs complain that you send us too many new Roses. I think I have sometimes been found in the complaining throng, but when I reflected that very many of the flowers I had myself raised and distributed, confident of immortal fame thereby, were already forgotten I changed my tone and adopted a new argument. Into that matter, however, I will not now enter: it is too large, but the fact remains that whether we seek new Roses, or new Pelargoniums, or new Peas, or new Potatoes, we must incur a certain amount of risk, for our standard of perfection may differ from that of the raiser of a new thing. But taking a broad view of the case the raiser is generally a good judge, and the vendor must be accredited with the desire to improve his trade by the diffusion of good things.

The successive issues of the "Garden Oracle" enable us to cast up accounts of the new Roses introduced to cultivation in the course of thirteen years. This work has attained its nineteenth year, but for reasons that need not now trouble us we cannot derive from it statistics of Roses for the whole of that period. Let us consider the facts that are available. Of new Roses introduced to our garden from France, there were in 1864, 22; in 1865, 68; 1866, 51; 1867, 63; 1868, 70; 1869, 57; 1870, 75; 1872, 66; 1873, 43; 1874, 14; 1875, 55; 1876, 14; 1877, 38. Of new Roses introduced to our gardens by English raisers there were in 1864, 2; 1865, 4; 1866, 4; 1870, 3; 1872, 8; 1873, 2; 1874, 6; 1876, 13; 1877, 2. Thus, in the same run of years your total amounts to 636, and ours to 44. A careful scrutiny will slightly reduce your total and augment ours, but the case as now stated is, I know, nearly correct. The whole total is 680, which, divided by thirteen, gives us 52 as the average per annum—just one new Rose per week the whole year round; to be admired first on Sunday, and remembered with joy the whole week through. Thus the Rose conforms to the first observance of Christianity; it is a Christian's proper flower, a refreshment for his blessed day of rest.

The number of varieties of Roses entered in the catalogue of any leading English house may be reckoned as about six hundred. In the latest catalogue of my friend Mr. William Paul the total of the varieties described is 613, of which there are 318 Hybrid Perpetuals and 114 Teas; these two classes showing a total of 432, there remaining only 181 to make up the remaining nineteen classes. The student of the Rose as a garden flower will, in a comparison of the catalogues of fifty years ago with those of the present day, observe the ever-growing power of the Hybrid Perpetuals as a class. In the older catalogues we find the summer Roses conspicuous; they were valued in the days gone by. Now a few pages suffice for their enumeration, and many that once were famous are no longer to be found. I scarcely know where to find such a hedge of the delicate and delightful Centifolia as I once rejoiced in. I have become a stranger to the giant bushes of *Rosa gallica* I once possessed; and not often do I meet with *Banksian* or *Macartney* Roses, for in truth our amateurs, with all their enthusiasm, have acquired a contracted taste, and the catalogues reflect it in the preponderance everywhere of Hybrid Perpetuals, Bourbons, and Teas. The exhibitions must, in part, answer for this; but the case has its bright side, for it is the splendour of the newer Perpetuals and Teas that ensures their popularity, and those who covet honours in the presence of the public will of necessity place upon the exhibition table the finest flowers their gardens will produce, and hence Perpetuals and Teas claim and obtain the first care of our English rosarians. Should I live to see Roses judged in gardens I will invite the jury to admire *La Ville de Bruxelles*, *Junco*, *Paul Ricaut*, and *Blairii* No. 2.—glorious reminders of a day when hope was young, and the pride of the heart was subservient to the simplest of inspirations. Yes; the exhibitions have changed the tone of taste in Roses, and the Perpetual class is like the serpent of Moses that swallowed all the rest.

The amount offered in prizes at our exhibitions of Roses

averages about £3000. There were held in England in the year 1876 at least fourteen Rose shows deserving to be named, besides many others of only local importance. That I may be understood, I name the places in which the fourteen shows were held. They were Alexandra Palace, Crystal Palace, Regent's Park, South Kensington, Maidstone, Oxford, Frome, Chipping Norton, Nottingham, Hereford, Helensburgh, Galloway, and Wisbech; and one of the most enjoyable of all our Rose shows is utterly unknown beyond the circle of its promoters. This is held annually in the corn market of Mark Lane in the heart of the City of London, the competitors being the merchants who carry on trade there, and the object of it being to aid the cause of charity. It is a transition from the beautiful gardens of these rich men, situate for the most part in the richly-planted suburbs of London, to the little gardens of the artisans of Nottingham, where Roses are grown as well as anywhere in the world; and for many years past the exhibitions of Roses by working men have been characterised by floral merit in the highest degree. This busy central town, noted for its manufactories of net, lace, cotton, silk, and wool, has for an appendage to its smoky dusty turmoil ten thousand little gardens that blossom into a giant wreath to comfort the brow of care and redeem human nature from sordidness.

On the 4th of July in the coming summer the amateurs will have a great day in London. A considerable number of the most eminent, with our greatest rosarian the Rev. Canon Hole leading the way, have combined their forces in a National Rose Society, and have arranged to hold a great exhibition of our national flower in the far-famed St. James's Hall, wherein, on the 1st of July, 1858, was held the first so-called National Rose Show, under the auspicious auspices of the same governing mind. Some reforms are to be attempted; the show is to be like a flash of lightning—bright, startling, and soon over; and there is a growing desire for a more picturesque mode of displaying the flowers. But so long as high quality of individual flowers is desired and required, the prevailing mode does not admit of any improvement, except in detail—the principle is sound, and represents the experience of many generations in floral competitions. Those who yearn for picturesque grouping of cut flowers are mostly young men who have everything to learn in respect of technical merit in exhibition subjects—as they grow in age, and wisdom, and depth of love they become conservative, and have no more to say about the vain dreams of their inexperienced youth. Your way of showing Roses we consider horrid, but you must not suspect me of any lack of politeness in saying so; because, in matters of floral art, we have agreed long since that candour, seasoned with a good spirit, cannot offend. It is a glorious sight to see ranks of Roses reposing on the freshest of green moss all in such order and so neatly named that every flower may be judged upon its merits, and we forget the harshness of flat surfaces and straight lines in the rapture that accompanies critical comparison of flowers that seemed destined to fill us with perplexity as to what after all is the acme of perfection, for they differ so, and yet are so deliciously beautiful throughout.

Two great results may be pointed to in justification of our enthusiasm in exhibitions. The cultivation of the Rose as a pot plant has attained with us a degree of perfection never known before. Our great exhibitions at Chiswick long since, and at Regent's Park in later days, have been characterised by the splendour of the pot Roses, and in remembrance of them the names of Lane, Paul, Francis, Fraser, and Veitch flash upon us for ever honourably associated with this phase of floral art. But there has not been seen in England such perfection of finish as in the pot Roses shown by Mr. Charles Turner of Slough at the Royal Aquarium and at South Kensington in 1876. It is this curiously successful cultivator's forte, that whatever he enters into becomes his forte, and his daily work illustrates the motto, "*Fortes fortuna juvat.*" Thus far one result. The other is really a part of it. Until quite recently pot Roses have been well grown by our commercial rosarians, but badly by our amateurs. But now—oh, happy time, that so it may be recorded—they are well grown by both parties. Thus the prizes offered for pot Roses grown by amateurs are no longer offered in vain, for in truth we customarily see of late years beautiful specimen plants from the hands of amateurs, although but a few years back such a pleasant spectacle was unknown. Pardon a possible egotism if I express the thought, which perhaps is vain, and the hope, that is certainly honourable, that the "Amateur's Rose Book" has helped to bring about this beneficial change in our cultivation of Roses.

But I must stop, and "leave half-told the pleasing tale." I will hope to write again if you will have me do so. Remembering, as a rosarian must, the debt that England owes to France—for the names of the Roses tell the tale—how shall I do other than hope that the Rose and the Lily may flower in both lands in gay and sweet companionship, and prove the true symbols of a gentle and lasting love that knows not of boundary lines and interests that conflict, but is animated by the spirit of dear Robert Burns when he yearned for the day when all men, the world around, would become "brothers a'?"—SHIRLEY HIBBERD (in *Journal des Roses*).

UNHEALTHY VINES.

"A JERSEY READER" gives us a sad history of his Vines, which consist of Black Hamburgs and Muscats planted in the same house seven years ago. They have produced "splendid fruit annually till last year, when the fruit was very inferior—badly coloured, and many small berries in every bunch. This year the crop is again a poor one, especially of Muscats, the growth of which is excessively weak and puny; while, on the contrary, the Black Hamburgs promise better things in future, as they are making good wood." It is supposed that this unfortunate state of things is owing to mismanagement, the cause of the "host of small berries" being clearly traceable to a check sustained by the Vines just as the berries were commencing swelling, and the statement that "the fire was out for two or three days when the bunches were in bloom" points to neglect; or was the example of faulty practice owing to ignorance? It is not at all unlikely, or at any rate it was undoubtedly ignorance which induced the subsequent application of a dressing of some three hundredweight of guano to a small Vine border, and thus instead of enriching it killing all the tender rootlets, and giving such a shock to the entire system of the Vines that careful treatment and painstaking will be necessary to bring them again into a flourishing condition.

So many examples of mismanaged Vines having come under our notice renders it desirable that the reply to "A JERSEY READER" should be made as useful as possible to others requiring some assistance. The remedy in this instance is of the most simple nature. Examine the border immediately, and make yourself thoroughly acquainted with the condition of both roots and soil. If rootlets are abundant, stout, healthy, and spreading among the soil in every direction, then let well alone, and turn your attention to the branches, which keep well thinned and thoroughly clean in every part, foliage as well as bark, letting little, if any, fruit remain upon them this year, and you may look forward to a full and abundant crop next year; for the nature of all Grape Vines is so wonderfully elastic that a season or two of skilful treatment is all that is requisite to bring the most sickly, often apparently worn-out, Vines into a satisfactory condition. But if, instead of healthy growing roots, most of them are found to have perished at the ends and new rootlets are not pushing freely in the soil, then we would not lose a day, but set to forthwith and remove all the soil in which the roots have failed, replacing it with rich sweet turfy loam. If your soil is not naturally a rich and fertile one, then use a mixture of three-fourths of turf an inch in thickness pared from an old pasture, broken into pieces as big as one's fist, and one-fourth of old black-looking well-decayed manure, with an ample sprinkling of any gritty matter that you can obtain, such as shattered bricks, the chippings of a stone quarry, or, best of all, gritty road scrapings. Apply this, give an occasional soaking of water if the weather prove very hot and dry, and you will soon have new roots in abundance greedily feeding upon the rich store provided for them, and infusing new life and vigour into stem, branches, and foliage.

Thus much for this particular case. Now let us turn our attention to general causes of failure and of success. It is a well-understood fact that without good soil we cannot have good Grapes; yet undue stress is occasionally laid upon the matter, and the scientific formation of Vine borders has been carried to an extreme, and what is really a very simple matter has been made to appear a very complicated and wretchedly affair. Let us call in a little common sense to our aid in this matter. The soil which will produce good vegetables will produce good Grapes, and we may safely apply it to either purpose; but in doing so we must not forget that vegetable culture is an affair of weeks or months, the crop then being matured, the plants removed, and the soil broken up and renovated with manure. The Vines, on the contrary, not only

remain in the soil, but their roots take possession of it so completely that it cannot be stirred or broken up. We therefore take care to drain it in the first instance in order to prevent any accumulation of stagnant water, and to incorporate some hard gritty substance with it to render it permanently open to the action of the air, and that water may find a free and ready passage through it. To enrich it and draw the roots to the surface we give an annual top-dressing of manure, such as is generally to be had from the farmyard, piggery, or stable, and with the exception of watering nothing more is really necessary to retain the Vines in full vigour for many years; avoid, therefore, any excessive application of stimulants. Large clusters of Grapes are only to be had by devoting Vines specially to their production, letting three or four bunches constitute the crop of each Vine instead of twenty or thirty, which is obviously an impracticable plan when a daily supply of Grapes is required for the table. Go to any of our largest gardens where Grapes are grown by the ton and the fruit is brought to a high degree of excellence, and you will find no sensational clusters, but any number of "two-pounders" with fine large plump berries. That is the point at which our best growers aim. Give them plenty of large berries and they are satisfied, not caring much about size of bunch. It is upon the berries that judgment is passed, and not upon the bunches.

Within the vinery itself we should strive to maintain a tolerably steady progressive temperature, an avoidance of crowding of wood, foliage, bunches, or berries, great cleanliness (I have strong faith in the efficacy of clean water), and close attention to detail. Take an ordinary example of good Grape culture as your standard of excellence, and if you attain to it rest content and leave the sensational bunches to those having means and time at their disposal for a process which after all is more interesting than useful.—EDWARD LUCHURST.

NOTES AND GLEANINGS.

WE remind our readers that the next exhibition of the ROYAL HORTICULTURAL SOCIETY and meetings of the Scientific and Fruit and Floral Committees will be held on Tuesday, May 15th. The change of the day could not have occurred at a more opportune time, since it leaves exhibitors and visitors free to patronise without inconvenience the first summer show of the Royal Botanic Society, which occurs on the day following. The meetings of the Royal Horticultural Society will in future be held on Tuesdays, except at any time the Council should have special reasons to select another day. Practically, however, the absurd clashing of the shows of the two great Societies—the Royal Horticultural and the Royal Botanic—is at an end.

— THE following letter has been received by the President of the ROYAL HORTICULTURAL SOCIETY:—" Buckingham Palace, May 2nd, 1877. Dear Lord Aberdeen,—I have been desired by the Queen to express to you and to the Council of the Horticultural Society, how much Her Majesty admired the magnificent exhibition of flowers and fruit displayed in the gardens to-day, when Her Majesty visited them with Princess Beatrice and the Duchess of Edinburgh. The Queen also was much satisfied with the arrangements made for her reception. I am, truly yours, T. M. BIDDLEPH.—The Lord Aberdeen, &c."

— AT the general meeting of the ROYAL HORTICULTURAL SOCIETY held on May 2nd, Lord Alfred S. Churchill, V.P., in the chair, the following candidates were duly elected Fellows of the Society—viz., A. Austin, John Barran, M.P., Alfred Bedborough, Duchess of Bedford, Mrs. Belli, B. Blenkinsop, H. J. Smith-Bosquet, Lieut.-Col. Boussfield, M.P., Mrs. Lewis Knight-Bruce, Hon. A. C. G. Calthorpe, R. B. Cater, W. J. R. Cotton, Mrs. Denison, Mrs. G. Dowdeswell, Mrs. Entwisle, John Trew Gray, John Grieve, J. S. Grimshaw, Mrs. Halsey, Henry Nye, J. T. Oswald, C. E. Pearson, Mrs. Poole, Colonel J. F. Porter, J. H. Pounce, Thomas Pyke, John Reeves, Rowland Robbins, Mrs. T. Skinner, Mrs. Rowland Smith, Mrs. Stephenson, Miss Towers, Miss Harriet Towers, James Webber, Thomas Whitburn, Mrs. Williams, W. W. Worth, &c. The Bristol Chrysanthemum and Spring Show Society, Grand Yorkshire Gals Floral and Musical Exhibition, and the Royal Jersey Agricultural and Horticultural Society, were admitted into union. A list of nineteen guinea members elected by the Council was also announced.

— THE LEEDS HORTICULTURAL SOCIETY having obtained by Fellowship with the Royal Horticultural Society a number

of the Society's medals, we hear that these will be awarded as follows at the annual Exhibition on the 27th, 28th, and 29th June:—The silver Banksian to the best grown plant in the Exhibition; the silver Knightian to the most worthy specimen of fruit exhibited. A bronze Banksian and bronze Knightian will be awarded at the discretion of the Judges.

— WE ought not to omit to mention a curiosity exhibited by Mr. Cutbush at South Kensington last week—namely, a new Tulip, named Mrs. Cutbush, stated to be the "FIRST BLUE TULIP." This is a novelty, and an interesting one. It is not the amount of blue in the petals, but the fact of its presence, that has warranted the above appellation. The blue appears to rise like a cloud from the base of the white petals, and break upwards in irregular streaks. The flower is not only undoubtedly novel from the unusual combination of colours, but attractive. It will be looked for again. It should be stated that several blooms were exhibited, all of which were alike tinged with blue.

— WRITING TO US ON EARLY MELONS, a correspondent states that Mr. Jordan, gardener to J. Bousted, Esq., Cannizaro House, Wimbledon, has cut very fine fruit from plants raised from seed sown on January 20th of the present year, and planted in a small pit early in April. The first to ripen was Sutton's Horticultural Prize, which was cut April 30th, and weighed nearly 3 lbs. Several others are nearly ripe which will weigh 4 and 5 lbs. Considering the earliness of the season at which they are ripe and the character of weather experienced, this instance of "express Melon growing" is deserving of record.

— MANY letters have reached us controverting the statement of "A MASTER GARDENER" relative to hedgehogs sucking cows. We can only give one extract from the letter of "A COUNTRYMAN," which appears to disprove of the matter. "In the first place," says our correspondent, "it is impossible for a hedgehog to get a cow's teat into its mouth; and in the next place, if it were possible, the cow would not allow it to do so on account of its very sharp teeth."

— WE are glad to hear that Mr. E. R. CUTLER, the Secretary of the Gardeners' Royal Benevolent Institution, has retired from the Westminster Fire Insurance Office, in which he has held a high appointment for many years, with a liberal pension and the highest esteem of the directors. Mr. Cutler informs us that he will now be "a free man," and that it is his intention to devote his time to the Gardeners' Royal Benevolent Institution.

— AT the great exhibition that was held at South Kensington on the 2nd inst. LADY DOROTHY NEVILL exhibited several articles made of oak stained with the mycelium of *Peziza æruginosa*, which gives it the appearance of Malachite. But the most interesting portion of her ladyship's exhibition was the living FUNGUS, which is cultivated in one of the Fern houses at Daungstein by Mr. Vair, the skilful gardener there. These specimens were objects of great interest to Her Majesty and the other Royal visitors, to whom they were explained by Dr. Hogg, Secretary of the Society.

— THE long corridor in the nurseries of Messrs. Veitch and Sons, Chelsea, is exceedingly gay with RHODODENDRONS in pots and baskets. The shrubs have been grown and forced in the Coombe Wood Nurseries. They vary from 1 to 3 feet in diameter, and their massive flowers and varied colours produce a striking effect. One of the finest of them is The Queen. Its colour is bluish suffused with lilac, the upper petals being spotted with orange. Other excellent light varieties are Mrs. John Clutton, Parity, and Onslowianum. Lady Rolle is also a splendid flower, but more heavily blotched than the preceding. Of the rich-coloured sorts Michael Waterer, Miss Buller, and Broughtonianum are the most noticeable; and Everestianum is extremely gay with its profusion of fine lilac trusses of fringed flowers. The few varieties named are especially worthy of cultivation for in or outdoor display.

— WE regret to announce the death of a fine old British gardener—MR. ALEXANDER CRAMB, who died suddenly at Tortworth on the 27th ult. in the sixty-eighth year of his age. Mr. Cramb was well known as a highly successful fruit-grower. He was a trusted servant of Earl Ducie, and a friend to all with whom he was associated.

— THE collection of ROSES in POTS to which a silver-gilt medal was awarded at the Royal Horticultural Society's Show last week was staged by Messrs. Lane & Son, Berkhampstead, and not by Mr. Turner as inadvertently stated in our report. Medals were also awarded to the following exhibitors for

Orchids:—J. G. Hepburn, Esq. (Mr. Loveland, gardener); Sir Trevor Laurence, Bart. (Mr. Spiers, grower); Sir Henry Peck, Bart. (Mr. Ollerhead, gardener); W. Terry, Esq. (Mr. Roberts, gardener); and J. W. Miles, Esq. (Mr. Perry, gardener). In our report we observe that the names of Mr. Miles and his gardener were transposed.

THE display of PINE APPLES exhibited at South Kensington last week were deserving of more than a mere passing notice. There were twenty-four of them, and about the same number are now arranged by Mr. Webber in the Central Avenue, Covent Garden. They are, perhaps, the most perfect fruits which have ever been imported from the Azores, for they are the pick of a cargo of two thousand which recently arrived. Both in appearance—the plumpness and brightness of the fruit, and the size and state of the crowns—they are quite equal to English-grown Pines. Their weights may be estimated at from 5 to 7 lbs. each. Since Pines of such excellent quality have been sent from Madeira the demand for them has greatly increased, and the prejudice which for a time existed against them as foreign fruit is rapidly diminishing.

COL. W. W. HOLLISTER might as well, while he is about it, buy the whole of California. He already owns 75,000 acres of that blooming State. On his Santa Barbara farm he has the trifling number of 40,000 fruit trees.

EARLY WRITERS ON ENGLISH GARDENING.

No. 31.

THOMAS HOGG.

THE taste for florists' flowers was first extensively promoted, if not originated, in this country about the close of the sixteenth century, for at that time a great increase of information as to their cultivation, as well as new varieties, were introduced by the Flemish worsted manufacturers, who were driven over to Norwich during the persecutions in their country by Philip II. and by the Duke of Alva in 1567. They brought over with them Gilliflowers, Provence Roses, and Carnations. This was in the reign of Elizabeth (1558-1602), who was herself very fond of flowers. Tulips and the Damask and Musk Roses appeared to have been introduced early in her reign. Gerarde says, in 1596, that a principal collector and propagator of Tulips had been so for twenty years, and had an immense variety. There is mention of a florists' feast at Norwich so early as 1637, at which a play or pageant termed "Rhodon and Iris" was performed. In 1671 Evelyn mentions Sir T. Brown's garden there as being a "paradise of rarities," and that the parterres of all the inhabitants were rich in excellent flowers. In short, Gerarde and others mention cultivators of flowers almost in every county of the kingdom. The taste pervaded every rank. The Duke of Somerset, the Duchess of Beaufort, Dr. Turner, Mr. Lete a London merchant, the artisans of each manufacturing town, are mentioned as delighting in flowers and flowering shrubs. The taste once become general has never since abated, and occasioned the establishment of a distinct branch in the trade of plant culture. Florists by trade are traceable in this country in unbroken succession from the reign of Elizabeth, and we may add, without any good ground for contradiction, that among our florists have been some of the most skillful, intelligent, and honourable of men. Among these was one for whose biography we are much indebted to a friend.

Thomas Hogg was born in the year 1771 at a small village on the banks of the Tees, and when he was of very early age his father settled at the village of Romald Kirk, near Barnard Castle, where he pursued the calling of a shopkeeper and farmer. When very young the subject of this notice displayed a great fondness for books, and manifested a strong desire after attaining information on all subjects. His parents being in easy circumstances, and having the advantage of a respectable and well-conducted school in the neighbourhood, they lost no opportunity to encourage the natural taste of their son, and develop, so far as lay in their power, the abilities which he had begun to exhibit. They therefore gave him a liberal education, which consisted chiefly of a thoroughly classical character, and he soon began to distinguish himself as an excellent Greek and Latin scholar. His diligence and assiduity attracted the notice of Dr. Eligh, the incumbent of Romald Kirk, who, having heard of his studious habits, and become acquainted with his proficiency in classical literature as well as his general well-grounded information on all ordinary subjects, determined to introduce him to a more suitable sphere.

He accordingly brought Mr. Hogg to London, at which time he was only about twenty years of age. His first engagement was as assistant to Dr. Thomson, who kept a large and highly respectable classical establishment at Kensington. He remained in this situation for a considerable time, until the death of the Rev. Mr. Shepherd, the incumbent of Paddington. This gentleman also kept a large educational establishment, which became vacant at his death, and which was now succeeded to by Mr. Hogg. This he carried on with much success for a period of thirty years, during which time he also devoted much of his leisure to floriculture; but as his health gradually failed, owing to a nervous affection brought on by severe study and close attention to his educational duties, his physician advised him to relinquish the school and devote his attention exclusively to floriculture. He obeyed the advice, and we have reason for saying that when he published the following in 1833 it was not dictated either by the querulousness or the self-sufficiency of declining old age:—

"As to myself, who unfortunately have been an invalid for sixteen years, suffering from paralysis and a diseased state of the nerves, and whose memory and faculties have been affected thereby, I cannot expect to claim any exemption from the like infirmities attendant more or less on old age; yet while I solicit indulgence on this account, I seek not, by unmanly concessions, to disarm fair censure and criticism of their just right to examine and judge of its merits; I mean as to the subject matter, and not the manner of describing it. My object (in publishing) is twofold. In the first place, I have been anxious some time to amend and supply the defects in my former work; and, in the next place, I have been not without hopes of deriving some small profit and advantage by publishing the "Supplement" on my own account; for the same necessity which obliged me to attempt seeking a livelihood in the garden, after I had been unfortunately rendered incapable of continuing my labours in the school, and I had then been gerund-grinding for thirty years, still exists in all its force. The gifts of fortune have not fallen to my lot, and I am therefore compelled to use the means within my reach for the subsistence of myself and a numerous family. Though my infirmities increase, and though I am able to do little or nothing myself, yet the same routine of culture and management will be continued as usual by my two sons, who have been for some years past the acting managers and florists in the business, so that my friends and customers may safely depend on being supplied with healthy plants, correct in every respect as before. It is some consolation in being able to state that in all the dealings which I have had with florists, both in England and in the different parts of the Continent, there is not one of them can say that I have not honestly fulfilled every engagement."

The above is extracted from his "Supplement" to another small volume, entitled "A Practical Treatise on the Culture of the Carnation, Pink, Auricula, Polyanthus, Ranunculus, Tulip, Hyacinth, Rose, and other Flowers." This was published first in 1830, and in nine years passed through six editions. They are amusing as well as instructive volumes, and the following will give our readers an idea of their varied contents:—

"One Christopher Nunn of Enfield, Middlesex, a noted florist in his day, was eminent for his skill and dexterity in dressing Pinks and Carnations for prize exhibitions; some will even tell you that Kit was the father of the art. Upon such occasions he had as many applications to dress flowers as he had to dress wigs, for he was a barber and friseur by trade, and withal a good-natured, facetious, prating barber, and could both shave and lay a Carnation with the greatest nicety. The novices of that day, who, being unacquainted with his secret art, trusted to Dame Nature to open, expand, and perfect their flowers, were no match for Nunn, for he began where she left off, and perfected what she had left imperfect. His arrangement and disposition of the petals were admirable, and astonished those novices. Kit's art of dressing is still an enviable art, and attainable only by few. Kit as a florist possessed other merit besides this; he could mix and temper soils with the same skill as he did his pomatum. He was a great experimentalist and compounder of manures; it was all the same to him whether he snuffed up the odour of Roes or the less inviting fragrance of animal ordure. It was he who first applied sugar-bakers' scum as a surface dressing to flowers, having witnessed its surprising effect upon the land of a neighbour of his, a sugar-refiner from Goodman's Fields; and he also had the credit of persuading and convincing Sir

Somebody Tresilian or Trevisnian, a Cornish baronet, that old rage and old wigs which contained so much grease and human fat were a much warmer and richer manure for his land than the oily carcasses of his pilchards; and it is further said that Kit, as agent or factor, in one week bought up more than two thousand wigs in the neighbourhood of that celebrated mart Rosemary Lane, which were sent down to try the experiment."

"MODE OF DRESSING A FLOWER.—I hardly dare attempt to draw an outline even of this sublime art of dressing a flower, because I have neither studied nor practised it myself, and, therefore, not being entitled to a diploma, I must neither assume the title nor degree of A.M.—that is, Artis Magister, by which alone I might be held qualified to teach it, but must

be content to be considered only as a pretender and quack upon this abstruse point. However, let us see what sort of a handle I shall make of it. In the first place, then, provide yourself with proper instruments—namely, a pair of brass or ivory etui, commonly called tweezers, and a small ivory bodkin. As soon as the guard leaves drop clap a card on, and with your bodkin from time to time assist the petals in falling into their places. Then fix a glass cap over the blossom to bleach the white and to enable the leaves by the warmth to expand freely. Shade the glass when the sun is out with a Cabbage leaf or bit of canvas. Take the glass off for an hour or two in the evening to expose the blossom to the air, lest the colours become faint by too much confinement and lose their lustre. Dissolve a little nitre or saltpetre in the water before

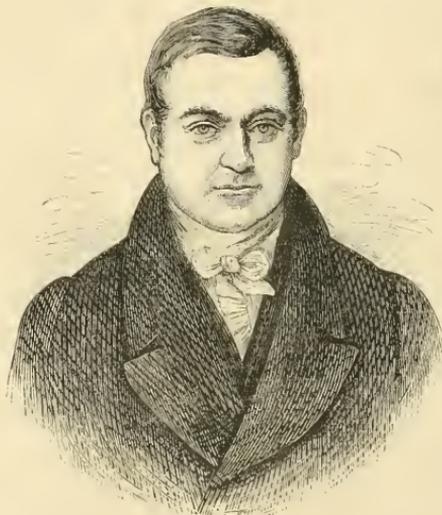


FIG. 11.—THOMAS HOGG.

you put your flowers in it. This will help to stiffen the leaves. After they have been in water a couple of hours take your etui and pull the guard leaves quite round and circular. Then place the second, third, and fourth tier of petals in an imbricated form—that is, like slates upon a roof or scales upon a fish, a leaf covering each division of the leaves in each row or tier, till they are all arranged in a convex form like the outside of a dome or cupola. Place the bizarred and finely-striped leaves in full sight, pluck out all white and self-coloured, all pouny and superfluous dull leaves, and those that will not lie whirl with your bodkin into the crown of the flower. Let the blooms be set in the cellar or coolest part of the house all night over a tub of water. Mind that the clefts or fissures down the sides of the pod do not reach below the bottom external cup, and that the guard leaves stand firm and support themselves without the card. A practical lesson, after all, upon the flower, is worth a dozen theoretical upon paper. Learn this art by practice, and practise to learn."

Mr. Hogg, contrary to his own expectations, lived for nine years after the publication of his "Supplement," and died as much regretted as he had lived respected. He was buried on

the south side of Paddington Church, near the road, where a small altar-tomb may be seen with this inscription:—

Sacred
To the memory of
MR. THOMAS HOGG,
Many years a resident in this parish,
Who died March 12th, 1841, in the 70th year of his age.
Also MRS. ELIZABETH HOGG,
Wife of the above,
Who died February 15th, 1822, aged 49 years.

The accompanying portrait of this good old florist and writer, which has been engraved from an excellent oil-painting in our possession, will be welcomed by the increasing number who are now happily interested in the cultivation of such flowers as the Carnation and Auricula.

GREENHOUSE RHODODENDRONS.

WHEN Mr. Taylor (one of Messrs. Veitch's foremen) conceived the idea of crossing the white *R. jasminiflorum* with the buff *R. javanicum* he had little idea of seeing such varied and excellent results. He was not at all prepared that the

beautiful pink variety Princess Royal would issue from such a cross; but when such was the case he was quick to perceive that a wide and important field was open for further experiment. Some years of waiting have brought a reward to the great Chelsea firm, and through them to the horticultural world, for since the value of this fine type of Rhododendrons has become admitted they will speedily find their way into all the important gardens of the country. The newer varieties, which have been lately exhibited and certificated, Messrs. Veitch state, have been obtained by the interesting of R. javanicum, R. Lobbi, R. Brookei, and R. Princess Royal, and in which the gorgeous and pleasing colours of these kinds

are blended into a great variety of brilliant and distinct tints. These hybrids are of far better habit than the parents, and far more floriferous; they produce their magnificent trusses of bloom while the plant is still young, and as they increase in age and strength yield splendid masses of colour; there is scarcely any season of the year in which there is not more or less bloom. They require the same temperature as R. Princess Royal, and are very suitable for a warm conservatory or greenhouse, where their brilliant flowers will be found an invaluable addition to the decorative resources.

We have had evidence that that description is fully justifiable, for the varieties we have noticed combine many excellent



Fig. 45.—RHODODENDRON TAYLORI.

qualities. Their colours are distinct and pleasing, the foliage is handsome, the habit of the plants is good, and they are continuous bloomers. They grow and flower with great freedom in an intermediate house, and the trusses continue a long time in beauty. The plants appear to require no particular season of rest, but go on growing, setting their buds, and flowering continually. A few which we have seen and which are highly recommendable are

Princess Royal, pink; R. javanicum × R. jasminiflorum. Very distinct and pleasing.

Prince Leopold, rosy salmon; R. Brookei × R. Princess Royal. Novel in colour and attractive.

Maiden's Blush, creamy white faintly suffused with pink; R. jasminiflorum × R. Princess Royal. A charming variety of undoubted merit.

Duchess of Edinburgh, orange scarlet shaded with crimson; R. Lobbi × R. Princess Royal. A rich and splendid variety. And

R. Taylori, warm pink with white tinge. We did not obtain the parentage of this charming variety. It is one of "the

best of the batch," perhaps in habit and foliage the "best of all." An illustration showing the natural size of the truss and flower is here given, and which affords a sufficient idea of the character of this valuable race of Rhododendrons.

BIRDS AND SQUIRRELS.

As many of your correspondents seem much troubled with birds and squirrels, I should advise them to keep a dog or a cat in their gardens. I have two cats, which live almost entirely in the garden and clear it of mice, and also a colley dog, which makes it the business of his life to drive away every bird he sees. The moment a bird settles on a tree or a bush the dog is after it, and barks round the tree till the birds rise, when he hunts them fairly out of the place. He has even filled-up his spare time by "bird-keeping" in a field of wheat, which is divided from my grounds by a low hedge, and my neighbour the farmer declares the dog has saved him the expense of keeping a boy to scare birds this winter, while he has done no harm to his crops. At the same time the dog is on ex-

cellent terms with the ducks, which walk sedately in and out of the kitchen garden and clear up the grubs and insects at their ease, perfectly undisturbed by the dogs and cats. The colley attends strictly to business, and would not dream of chasing a chicken or a duck, while he never allows a wild bird a moment's peace.—E. E., *Wills*.

WATERING ROSES.

Nor much has been written "about Roses" lately in your pages. It is not quite the Rose season; for now the trees are resting, and their owners appear to be resting too. But the Roses are now awakening into growth, and we also must be up betimes and aid them in the best way we can in rendering that growth perfect.

I have said the Roses are resting; but I doubt if they ever really rest. I sometimes think they work even during the winter, and appropriate and store such food as is within their reach, and of which they in due time show us the benefit. Perhaps I grow different Roses and for a different object than do the real rearers. I grow them also in a different manner from that often adopted. A limited number of "fat blooms" is not my object, and trees "one year from the bud" are not my favourites. The favourite Roses in this garden are real bushes and real trees which have been growing in the same places for twenty—thirty years and more, and which appear each year to be more beautiful than before. They are Roses so hardy that they do not require to be dug-up annually and wintered on a sheltered north border—such tiny miffy sorts are not suited for a Yorkshire garden and to produce a cartload of flowers for a choral and floral festival. The Roses in this garden are not enveloped in Fern or thatched with straw, for they need no such "protective care." They are old and hardy—so hardy that some of them survived that long-to-be-remembered arctic Christmas-eve of 1860, when the thermometer fell below zero and many a cherished favourite fell too; many, however, only to rise again, for being "on their own roots" they started afresh with renewed vigour and have ever since resisted the severity of the winter's frost. They are not pruned, perhaps, as a Paul would prune them, nor are trained as a Cannm would train them. A few gross overfed shoots producing a few highly-fed blooms are not what are coveted here. They are not "bleated aristocrate" nor "globular" ecclesiastics; they are plebeian Roses—Roses grown in the mass and for the masses—Roses that are not grown as food for the learned criticism of a few, but for affording delight (it may be unlearned, but it is not unrelished) for the many. They are not growing in "2 feet of loam and a third of manure," but they are just growing in the plain garden soil—strong in texture it is, but not clay, and it is not more than a foot in depth, and then come the stones. "But what sorts of Roses can grow so long and thrive so well in such 'stuff,' and how are they supported?" I fancy may be the mental inquiry of some. I will tell them.

One of these Roses—one of the finest, is *Chénédolé*. I cannot say how many times a blackbird has built its nest in this "tree," and how many black nestlings have looked upwards at the crimson firmament above them and received their "first impressions" of a beautiful world. Then there is *Madame Plantier*, like a mountain of snow in June and July, that one bush having more blooms than probably all the "plants" of *Marie Van Houtte* in the county. Then there are *Drenuss* and *Blairii*; the "two Charles," *Duval* and *Lawson*; and the two *Pauls*, *Perras* and *Kicaud*, and "William"—*i.e.*, *William Jesse*. *Pierre de St. Cyr*, if old, is still beautiful, and *La Ville de Bruxelles* gives armfuls of flowers. *Coupe d'Hebe* on the gable end of the vicarage is splendid (what a grand wall Rose this is!). Our young ladies say this Rose is the "Queen's favourite," and who will say it is not worthy of that honour? And then there is a hedge, a veritable fence, of the old Scotch Rose often decked with ten thousand bright buds; and for "button holes" the most esteemed of all is the old double *Persian Yellow*. Those are a few of the Roses which are grown; and now to the question of support, which brings me to my text.

They are supported with water—we call it wine, for it makes the Roses so glad and brings colour to their cheeks—no, leaves and flowers. What is wine to the Roses is liquid manure to us. It is convenient to empty some large tanks and cesspools when the family are in London during the first week in May, and then the trees have their feast of wine, and give us in return a feast of Roses. The buds are then swelling and come

out boldly, the foliage subsequently unfolds a rich dark green, and the flowers expand freely.

It is no use for those learned in the "laws of vegetation" to tell me that it is wrong to water Roses when there is no foliage to absorb the water. They may, perhaps, prove to their own satisfaction that such a system is wrong in theory, but many yearly "wine feasts" have satisfied me that it is right in practice. I am convinced that it is not only right to apply liquid manure to Roses now, but that it is the best time to apply it. I like to saturate the ground wherein are the roots of the Roses until no more liquid can soak in, and I like to "give it 'em strong," as our old coachman says when he assists in the work. Roses growing against walls where the soil is not rich, and is possibly dry, are greatly benefited by a thorough soaking of liquid manure at the end of April or the beginning of May. Roses also in the open, where the ground is richer, and it may be wet, are similarly stimulated by the liquid food.

I cannot listen to objections as to the water perishing the roots and souring the soil. I think, perhaps, what we call sour the Roses interpret as being sweet. At any rate, I know that they enjoy the May watering and show the benefit of it throughout the blooming season. To all who have Roses which have been growing for years in the same soil I say, Give them liquid manure now, give it freely, and give it strong; in fact, I do not know of any Roses, let them be growing in whatever soil they may, which would not be benefited by an application of this nature. If I am asked what kind of liquid manure? I reply, Any kind. The drainings of manure, the contents of cesspools, soap-suds, &c.—all are good for Roses, and if none of these can be had give them guano water; strength, 1 oz. to the gallon and a pinch of salt; mix and use immediately, giving as much as the soil will take. Liquid manure is a capital medicine for Roses; it promotes health and prevents mildew, especially when taken in the spring.—A PARSON'S GARDENER.

DISBUDDING FRUIT TREES.

A FEW weeks ago you published some remarks on Vine culture, in which the importance of thinning the shoots was pointed out; and the benefit this has on the Vine applied with equal force to most kinds of fruit trees growing out of doors, especially those trained against walls. Many consider that disbudding and pinching are indispensable to the well-being of Vines, Peaches, and other trees under glass, but few, excepting good professional gardeners, think the same practice is necessary or would be advantageous to outdoor trees; yet in many instances disbudding is more useful out of doors than under glass, because outside trees often produce more young wood than those indoors, and the former have not the same chance of ripening their wood when it is close together as those with the assistance of glass. Old standard trees which are fully grown are hardly worth the trouble of disbudding, besides the wood on such is seldom of luxuriant growth; but young standard trees of Apples, Pears, Plums, Cherries, &c., should all be disbudded, not only with the view of giving the young shoots sufficient space to develop, but also that the trees may grow-up in a symmetrical form.

In disbudding standard trees first remove the shoots which are growing the closest together, and those which are growing in the direction of the centre of the tree should always be taken before those which are growing outwards. The disbudding, however, of standard or bush trees is of secondary importance to those trained against walls, as the air cannot circulate all around the latter like the former, and there is, therefore, all the more need to attend to the disbudding of wall trees.

Before describing the mode of disbudding I desire to say that it is a bad plan to commence the work too early. Removing the shoots before they are well formed, or just when they are composed of a few leaves, is depriving the fruit of excellent protection, as I find nothing saves the fruit so perfectly from cold blasts and nipping spring frosts as being surrounded or partially covered with leaves.

The first week in May is quite early enough to begin disbudding any tree out of doors, and at first only a few of the shoots must be removed. In beginning it will be seen that some of the young growths are going directly against the wall. Rub off every one of these, and at the same time remove all those which are growing straight out from the wall. This will leave the remaining growths arranged along each side of the old wood. Leave them like this for ten days or a fortnight longer, then go over them again, and this time reduce the

number of the shoots until they are 6 inches apart, and always bear in mind to leave a good shoot in a good position near the base of the old wood. This will keep the trees from becoming bare of fruiting wood in the centre. Always leave shoots to fill up open spaces, and never crowd them together upon any consideration. This kind of disbudding applies principally to Peaches and Nectarines, but young Plums and other trees require to be dealt with in like manner. At the last disbudding always try to leave the fruit as much exposed to the light and sunshine as possible. Old Apricot and Pear trees which send out large bunches of young shoots from the spurs should have some of the shoots taken away altogether, and the others should be cut or nipped with the finger and thumb about 2 inches from their base. This saves pruning in winter, and is much the best way of securing healthy fruit buds for another year.—PRACTICALIST.

DEATH OF MR. J. R. REEVES.

It is with deep regret that we have to announce the death of Mr. John Russell Reeves, F.R.S., F.L.S., which took place at his residence of Woodhays, Wimbledon, in the seventy-third year of his age. Mr. Reeves was long known as an ardent lover of science, and especially of natural science, and from the position he occupied he had ample opportunities, which he freely used, of promoting its advancement. Horticulture and botany have lost in him a liberal and enlightened patron. He was for some years on the Council of the Royal Horticultural Society which resigned in 1873 in consequence of the agitation raised by Sir Alfred Slade, Mr. Chetwynde, and others; but Mr. Reeves was always opposed to that resignation as being illegal, and he stoutly opposed the fatal step to the last. Like his father the late Mr. John Reeves, whose death we recorded just twenty-one years ago at the age of eighty-two, and after whom so many plants have been named, Mr. John R. Reeves was equally assiduous during his sojourn in the East to forward to the Royal Horticultural and Zoological Societies any objects of interest or of rarity with which he was brought in contact. It is in honour of him that the beautiful pleasant Phasiensis Reevesii is named, and many plants now so popular and ornamental in European gardens were introduced through his instrumentality. Mr. Reeves was for many years connected with the commerce of the East, and was one of the heads of the great house of Dent, Palmer, and Co., in the City of London.

THE NATIONAL AURICULA SOCIETY'S NORTHERN SHOW.

A FEW hours of real pleasure devoted to an inspection of the treasures brought together by the exhibitors at the National Auricula Show held at the Town Hall, Manchester, on April 27th, gave full evidence of that strong and lively appreciation of the beautiful in Nature and cultivation for which the artisans and their employers have so long been famous in the two counties of Lancashire and Yorkshire. The latent fire of a memorable past only needed the kindling spirit of a Horner or Barlow to give life and activity to the slumbering embers of the famous old florists of the neighbourhood, whose presence was pleasing evidence there, although they had long ago to retire before the overwhelming foe of scarlet, Geraniums and ficke fashion. They only needed the word of command to step to the front in their neat, not rusty, uniforms and challenge the criticism of the most fastidious. Auriculas, although the principal feature, were not the only things of beauty, but formed the gems for a magnificent setting of beautiful-flowered and foliage plants kindly lent by the principal growers around Manchester.

I append a list of the names of the principal prizetakers; many of them, like old sons, are always welcome. To give the names of all the good flowers would occupy too much of your space, but the following in the classes I think unparpassed:—Of white edges, to which I would yield the palm, although those who know them better than I claim premier place for the green edges, are John Simonite, with its lovely frosted silver margin, Frank Simonite having a grand violet ground overlaid with its well-defined silvery band, Smiling Beauty, and Catharina always the perfection of correct form and marking. Green edges included Prince of Greens, Talisman, and Freedom; also several very beautiful unnamed seedlings of great promise. Of greys Lancashire Hero has no rival; Geo. Lightbody, Charles Brown, Bolivar, S. Barlow, and Alex. Meiklejohn were all first-rate. Selfs.—The finest were Charles Perry, Metropolitan, Pizarro, and Elen Lancaster. The rich colour of Lord Leigh and Marquis of Lorne give great promise for the future to those interested in raising new varieties.

A very interesting box of seedlings, exhibited by S. Barlow, Esq., and raised by the Rev. F. D. Horner, many of them in good form, of the most delicate shades of greenish yellow and primrose, are full of promise for the future development of quite a new race of flowers, which, if they do not find a place in competition with the present standard flowers, cannot fail to find admiration as decorative plants. The following is a list of the awards:—

Class A, six dissimilar (one at least in each class).—1, Rev. F. D. Horner, Kirby Malzeard, Ripon. 2, B. Simonite, Sheffield. 3, H. Wilson, Halifax. 4, J. Booth, Falsworth. Class B, four dissimilar (one in each class).—1, Rev. F. D. Horner. 2, B. Simonite. 3, C. Boyd, Rochdale. 4, Miss Steward, York. Class C, dissimilar (pairs).—1, Rev. F. D. Horner. 2, T. Mellor. 3, C. Roida. 4, S. Cooper, The Hollies, Timperley. Class D, four Alpines.—1, R. Gorton, Eccles. 2, S. Cooper. 3, Miss Steward. Class E, green edges (single plants).—Premium, Rev. F. D. Horner. 1, B. Simonite. 2, 3, and 4, Rev. F. D. Horner. 5, B. Simonite. 6 and 7, Rev. F. D. Horner. 8, C. Roida. Class F, grey edges (single plants).—Premium, S. Barlow, Stakehill. 1 and 2, Rev. F. D. Horner. 3, J. Booth. 4, 5, 6, 7, and 8, Rev. F. D. Horner. Class G, white edges (single plants).—Premium and 1, Rev. F. D. Horner. 2, W. Wards, Winsill. 3, D. Jackson, Middleton. 4, B. Simonite. 5, Miss Steward. 6, P. Mellor. 7, B. Simonite. 8, Rev. F. D. Horner. Class H, selfs (single plants).—Premium, H. Wilson. 1, Rev. F. D. Horner. 2, C. Roida. 3, S. Barlow. 4, Miss Steward. 5 and 6, W. Wards. 7 and 8, B. Simonite. Class I, Alpines, yellow centres.—Premium and 1, S. Cooper. 2, 3, 4, and 5, R. Gorton. Class K, Alpines, white centres.—Premium and 1, Miss Steward. 2, R. Gorton. 3, Miss Steward. 4 and 5, R. Gorton. Special Auricula Prizes.—For best Lancashire Hero, Rev. F. D. Horner. For best green edge, Rev. F. D. Horner. For best grey edge, B. Simonite. (Chosen from the whole Exhibition).

Foljochus (spiral) dissimilar.—1, B. Dyson, Chadderton. 2, M. Partington, Middleton. Single plants.—Premium and 1, 2, 3, 4, R. Dyson. 5, D. Jackson. 6, W. Taylor, Middleton. 7, G. Smith, Edmonton. 8, M. Partington, Middleton.

RICINUS GIBSONII.

Of all the varieties of the Castor-oil Plant this I consider to be the most distinct and effective. For subtropical gardening it is highly suitable, and shows to great advantage from the contrast afforded with the surrounding plants. Its habit is robust, yet the plant is not in the slightest degree coarse, and the colour of the leaves and stems is quite distinct from that of any other strong-growing bedding plant. A single plant growing in the centre of a small bed of *Centaurea*, *Cineraria maritima*, or *Gnaphalium lanatum* has a very fine appearance; also a number of plants thinly disposed over a wide expanse impart a diversified effect to the garden. This *Ricinus* comes true from seed, which should be sown at the present time—one seed in the centre of a small pot, and placing in a heated frame or house. The plants can be shifted into larger pots when required, and be gradually prepared for planting-out in June. Castor-oil Plants are frequently raised too early, and become drawn for the want of suitable structures to grow them in during the spring months; but by comparatively late sowing—say the first week in May—the evil of having spindly plants is in a great measure obviated.—A FLOWER-GARDEN FOREMAN.

NOTES ON VILLA AND SUBURBAN GARDENING.

In greenhouses and other places where Vines are grown without the aid of artificial heat they will by this time have started well into growth, and in most cases the young shoots will have become sufficiently strong to be secured to the wires placed in the house to support them. Handle the shoots carefully, and if they appear stubborn tie them loosely at first and return to them again in a few days, when they may be placed where they are required. As soon as the shoots have grown about two joints from the base stop the main stem, and if there be only one bunch show cut the main stem the weakest, and avoid overtopping; and when laterals shoot again from the joints below where they are stopped, stop these again to one joint. Keep the atmosphere as moist as possible consistent with the requirements of the other subjects in the same house, and close early in the afternoon to raise the temperature and conserve the sun heat. By this treatment the Vines will make rapid growth and soon be in bloom.

The bedding-out of summer occupants of most gardens will now receive attention, more especially in gardens where spring bedding is not resorted to. Very often during the spring months we find flower beds as gay with Wallflowers, Myosotis, Fannies, Polyanthes, Daisies, Silenes, Collinsias, and other effective annuals as at any time during the brightest of summer months. Spring bedding, however, has its disadvantages, for very often with a late spring like the present one the flowers must either be destroyed when in full beauty, or delay is incurred in the planting-out of the summer favourites until a very late period, and which is occasionally detrimental, for they have not time to become established, more especially in hot dry soils, before the drought of summer usually sets in. With the thermometer registering from 2° to 8° of frost every morning during May, as yet, many spring flowers have suffered considerably. We would urge

on amateurs both in the midland counties and in the north—in fact in all but highly favoured localities, to refrain from planting their summer-flowering plants until from the 20th to the end of the month. But to facilitate matters everything possible can be had in readiness; beds unoccupied can be turned and mowed, the edges trimmed, &c. It is a good plan to make a note on paper of the plants to be bedded-out and the positions they are to occupy: this will be of great aid at planting time. Continue hardening-off the plants as well as circumstances and convenience admit. We have had Geraniums out in all this bleak weather with only the covering of mats.

Outside window boxes are very pleasing adjuncts to many a villa and suburban residence, as well as to numbers of our town neighbours, whose only "garden" is their window boxes. The plants suitable for this purpose are numerous. In bleak and exposed districts, such as on the north or north-west sides of houses, where the sun can scarcely ever penetrate, or in exposed situations at the seaside, there are none better than the common and variegated *Eucnymyses*, varied with *Aucubas*, small *Retinosporas* or *Thujas*. At Brighton, where plants suffer so much from a fierce cutting wind, blowing with it the fine salt spray from the sea, the *Eucnymyses* endures with impunity, and almost every window is gay with these liliuputian shrubs; but in more favourable districts bedding plants of various sorts can be attractively arranged in window boxes. The yellow of the *Calceolarias* is seen to advantage lighting up the others, while the blue of the *Lobelia* gracefully weaves over the sides. Small *Fuchsias* and *Geraniums* are also plentifully used, and are very useful. Ivy screens sometimes form a background to these boxes, and where the Irish Ivy is trained neatly over its wickerwork support it is very pleasing, and renders the whole box more effective. The boxes should be of sufficient depth to afford good root space, and by replenishing at intervals they are always gay, and afford pleasure to great numbers.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

As was the case last year at this time, there is an abundant promise for fruit, the trees are robed in white; but "there is none a slip between the cup and the lip" and "we must not count our chickens before they are hatched," and so until all dangers of spring frosts are over it is quite superfluous to calculate upon what we shall do with our over-abundant crops this year. How has May come in? is a most anxious question from those depending upon their crops for their daily bread. In our district it has come in mournfully, like it did last year. Cold, thin, east winds have been prevalent since the 1st, with the thermometer ranging but a few degrees above the freezing point, and sometimes falling as much as 5° below it. Under such circumstances it is not likely that the more choice varieties of Pears will set well, and such weather must tell upon Plum and Pear trees, the blossoms of which had shed their petals before the nights became quite so cold. If we take last season as an example the fruit will be likely to drop off in a few days. We have tried various schemes to protect the blossoms, but have been only partially successful. If any correspondents could suggest any practicable method of covering such trees as are to be found in all well-kept gardens, such as pyramids and dwarf-trained specimens, so as to protect the blossoms from frost and not to set in uniformly in other respects, it would be a great boon.

A few of the more choice kinds may be grown in glass structures as recommended by Mr. Rivers, at hundreds cannot afford even rough glass houses, and they have not the means to grow the trees in pots; otherwise it is a very pleasant occupation for one who has time and means to cultivate fruit trees under glass, and to those who fancy this style of gardening we would say, The rougher the house the better do the trees seem to thrive. No harm results if there is a little ventilation between many of the laps where the glass meets on the roof. The trees if in pots require considerable supplies of water at the roots, and they must not be quite neglected in winter.

The shading fixed upon rollers for the wall fruit trees should be let down at sunset and drawn up in the morning about eight or nine o'clock. The trees ought not to be covered a minute longer than is necessary. The smaller fruit does not seem to have suffered much from the frost as yet, the dryness of the air and the ground having been favourable means of preservation.

It is again necessary to urge the importance of destroying all caterpillars and larvae of insects which infest buds and blossoms in as early a stage of their development as possible.

ORCHARD HOUSE.

The fruit on Peach and Nectarine trees seems to have set very well, that on Plum and Pear trees not so well. The glass has been put-in in very large squares, and the builders were careful to fit the squares closely at the laps, and the glass upright sashes at the sides are formed of single squares 4 feet in length, so that unless the ventilators are open the house is almost air-tight.

We blame this for the Pears and Plums not setting well, as the air is always damp owing to the water applied to Strawberry plants in pots. At Mr. Fraser's nursery, Lea Bridge Road, the fruit trees in his orchard houses set their blossoms much better than ours. The treatment of the trees is similar, but the houses are built in a much rougher manner, with spaces for air where the panes lap over each other. Of course air can be given at the ventilators, but this is not so effectual as having it distributed all over the surface of the glass.

Aphis has appeared on the trees in different parts of the house. This pest periodically visits us with the advent of the young leaves, and the most effectual means for its destruction is to fumigate with tobacco smoke. It requires three applications, and this is generally effectual. It is all very well to sponge or wash with soapy water, but if you clear the insects from one tree or branch of a tree they will appear on another part, &c., *ad infinitum*. Not so with smoke; every part of the house is permeated with it, and the destruction of insects is complete.

The trees are looked over occasionally to disband the branches, and to cut-out any shoots which may be wrongly placed or which are not required. When the trees are under a system of pinching the young growths soon become crowded, and they are not always sufficiently thinned-out in autumn. It will be found that thinning can still be done with advantage.

During the present cold weather water must be applied carefully; still the trees must not be allowed to suffer, as they frequently do, especially those which have been top-dressed in the autumn or winter. We were so sensible of this evil that we pot our trees every year now instead of biennially, as used to be our practice. The surface compost becomes sodden with wet, while underneath the soil containing silver roots often becomes dry, and this evil increases as the days lengthen. We do not mean that all or nearly all the trees get into this state, but some of them do, and it is well to avoid the evil if we can. The potting must be done as soon as the fruit is gathered in the autumn; at that time the pots soon become full of fresh rootlets, otherwise it is not safe to pot annually. With our method of early potting a good set of fruit is certain so far as it is controlled by the roots. During this cold weather we do not syringe at night, only in the morning; and one thorough syringing at this season is better than two, if in the latter case the water is not thoroughly applied to the leaves. Apply air early in the morning, first a little at the highest part of the house, and close the ventilators between four and five o'clock in the afternoon.

CUCUMBERS AND MELONS.

Where these are growing in frames it has been an anxious time to those in charge of them, but with care and right management the plants may be kept in good growing condition. The first essential is warmth at night: to secure this cover-up with mats, or preferably mats and some cheap blanketing under them. Do not let the soil containing silver roots get so cold that when it was placed under the mats tender plants were kept safe during the coldest nights. Covering the glass will not avail unless at the same time the heat of the bed is kept-up by linings. When the heat has declined cut away the old material round the outer side of the heap, and mix it up with an equal portion or more of fresh stable manure, and afterwards throw it up round the frame. Then as to watering. Those who possess forcing houses can place a potful of water in there; failing this the pot containing the water may be placed in the frame until it is made sufficiently warm. The details of Melon culture is similar to that of Cucumbers, except that a compost comprising more loam and less manure is better adapted for them. In the Cucumber house the plants are growing rapidly and producing abundance of fine Cucumbers. The growths are thinned-out weekly and regulated. The temperature is 70° at night with a corresponding rise by day.

ORANGE AND FIG TREES IN POTS.

These are now making good growth. The former require 70° at night, and Figs will do well in the same temperature, but we think 65° sufficient for them. They do not receive manure water, but the surface of the soil in the pots is dressed with some rich material, and nothing is better than loam, guano, powdered charcoal, and bone dust in about equal proportions. This compost can be readily obtained, and the trees speedily show by their rapid growth and healthy appearance that they like it. Both Figs and Orange trees require to be thoroughly syringed twice a-day at this season. The water used should be made warm by standing it over the hot-water pipe, and we apply the water with considerable force to the under sides of the leaves. This is the only way to keep red spider from the Fig leaves, and it helps considerably to prevent the spread of scale on the Oranges.

PORCING FLOWERS.

A continuous supply of Pinks, Roses, and Pelargoniums serve to keep a conservatory gay with but little assistance from other plants at this season, and few other flowers are more useful for cutting; and the expense of such plants after the first purchases have been made is but little. The main requisite for

forcing is a low pit capable of being heated to 55° during cold nights without overheating the pipes. The plants should be near the glass, as light and air are all-important. Strict attention must be given to keeping them entirely free from green fly, as after the plants are placed in the show house they ought not to be fumigated, as the smoke scatters the petals of Pelargoniums and destroys the sweetness of the Roses and Pinks.

FLORIST FLOWERS.

Tulips have bent their heads to the keen frosts where not protected; but where the usual shading material has been provided they suffered nothing from that cause. The colour is showing on the petals, and without the canvas covering at night and shade by day the purity of the flowers would be marred very much, for this morning (5th inst.) everything is frozen stiff. The thermometer has fallen to 25°, or 7° of frost. Carnations are still under the protection of glass lights; not that a frost like this when the plants are dry will do any harm, but the continued east wind does them no good. It will be necessary to place them out very soon, as the spindles have come in contact with the glass. So far the plants have made excellent progress, and they are quite free from insect pests, and this is a great point, as green fly is a pest indeed. Pinks move slowly, but the ground is frequently surface-stirred with the hoe, and this keeps the plants in excellent health. The leather-coated grub has destroyed a few plants, but on the first trace of them we watched at night with a light and found the nocturnal marauders feeding.

Auriculas are now behind the north wall, but had we known what the weather would have been they would not have been placed there so early; still, many trusses are yet opening, and many plants that were shown at the Crystal Palace are still in bloom. As the blooms die-off the seed pod is pinched-off with the fingers. It is dangerous to break the stalk off, as then it becomes a mass of decay which cannot be removed sometimes without the loss of the plant. Do not let the plants be placed too closely together, and admit all the air possible, removing the lights altogether when the air is still during the day. After such cold nights as we have the days are very warm. We shall begin potting in a few days, and for this purpose there is no better material than turfy loam four parts, one part of decayed manure, one of leaf soil, and a little sand added to loosen the particles if they are adhesive.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

- William Rumsey, Joyning's Nurseries, Waltham Cross, N.—*Catalogue of Select Bedding Plants and Flower Seeds.*
- Dick Radcliffe & Co., 123, High Holborn, London.—*Catalogue of Seeds, Plants, and Horticultural Decorations.*
- Duncan & Sons, 1, Waterloo Place, Edinburgh.—*Catalogue of Florists' Flowers.*
- Thomas Banyard & Sons, 48, Week Street, Maidstone, Kent.—*Select List of Bedding Plants, Roses in Pots, Climbers, &c.*
- William Bull, King's Road, Chelsea.—*Illustrated Catalogue of New and Rare Plants.*

TO CORRESPONDENTS.

*. All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense. Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

SNOW PANISSE (A. S. F.).—The following are good in the three classes:—*Self*: Arab, Mrs. Knight, Captain Elder, and Golden Queen. *Yellow Grounds*: Robert Pollock, William Campbell, Mrs. Russell, and Robertson Munro. *White Grounds*: Duchess, Belina, Stunty Park Beauty, and Miss Derry M'Aslan.

DESIGN FOR A SMALL FLOWER GARDEN (A Reader of the Journal).—A large central oval of small garden at each end and a triangular bed in each corner would look well upon your piece of ground 6 yards by 15; far better in fact than a more elaborate design, especially if the planting is well done and the colours tastefully and well balanced. We cannot undertake to prepare designs, but will criticise any you may send us.

RIBBON BORDER (P. F. S.).—Discard the scarlet Geranium, replacing it with some good pink kind, such as *Master Christine* or *Mrs. Miles*, and the effect will be perfect. If it is inconvenient to do this and the scarlet kind is retained, we would prefer seeing it placed behind the grey-leaved *Cineraria* rather than suffer it to go next the yellow *Calceolaria*.

POLLEN OF ACUCBA (S. B.).—The male *Acucba* is now so common you may succeed in obtaining pollen if you make your wand known among your friends or to the nearest nurseryman.

ASPARAGUS FOR EXHIBITION (C. R., Birmingham).—A fine dish of Asparagus would not only be admissible in a collection of vegetables in August, but would be an acquisition.

ROSES IN GREENHOUSE (Mrs. L.).—We can only conclude that the *Roses* not flowering are in a more shaded position than that of the others, the wood not being sufficiently ripened. They are not more unsuitable than the others for greenhouse culture. Allow them to grow, and prune moderately.

EXHIBITING ROSES (T. H. S.).—A gentleman's gardener who is allowed to sell *Roses* becomes a dealer, and as such he would be objected to exhibiting in the amateur classes. A grower cultivating for profit is not an amateur.

POLYANTHUS FLOWERS (R. K. P.).—None of the flowers sent are quite perfect according to the florists' standard, for the yellow centre of two of the flowers slightly runs into the blue colour, and the lacing is not sharply defined; and of the remaining two, while the flowers are correct in the clearness of the lacing, the segments are a trifle too much pointed, and the yellow of the lacing is not quite so deep as that of the centre. Still they are superior to nine-tenths of the *Polyanthuses* which are exhibited in London, and you need not hesitate to exhibit them if you have an inclination to do so.—We are, in the above, of course, of opinion that you are a most skilful and successful grower of the flowers in an upright position. We congratulate you on your strain, and advise you to continue selecting and improving. The body colour of the flowers is very rich and good.

BLOOD ORANGE (C. D. J. T.).—The *Blood Orange* is merely a sport from the common *Orange* originated by seed, in the same way as a *Ribetum Pippin* is from the *Apple*, or a *Green Gage* from the *Plum*.

VINE SHOOTS SCALDED (Surbinton).—The shoots are scalded by the sun's rays falling powerfully upon the shoots while wet. Mrs. Pince and Lady Downe's are more liable to scald than many others. The only remedy is to discontinue the syringing, and admit air earlier, keeping-up a good atmospheric moisture by frequent sprinklings.

BLUE GLASS FOR VINERIES (A Novice).—We have no experience of blue glass particularly, but we have seen glass of various colours used in a conservatory, and in no instance with so apparent advantage over other parts of the house glazed with British sheet of thirds quality. In this country we have no need of blue lights; better *Grapes* we believe are grown in England under colourless than in America under blue glass.

VINES OVER-LUXURIANT (J. K.).—Ventilate more freely, yet judiciously. Do not allow the vines to have light during the night, and admit more air very early in the morning, increasing it gradually to advance of the increasing temperature. Allow all the foliage possible to remain, but avoid overcrowding as you would a scourge. The evil of which you complain is in a great measure the result of insufficient ventilation. Do not let the night temperature exceed 60°.

ASPARAGUS EATEN BY GRUBS (An Irish Subscriber).—Perhaps the heads are eaten by *Elgæ*, which may be destroyed by sprinkling the beds with salt, giving the beds an application so as to make the surface quite white, or, what answers better, nitrate of soda, applied at the rate of 1 lb. to 30 square yards. Petroleum oil is very powerful, and is useful as a preventive of the attacks of predatory vermin. It is, however, very fatal to the foliage of plants, and requires to be applied carefully. We find that a teaspoonful thoroughly mixed with three gallons of water, and before use skimming off the oil rising to the surface, is good for stepping seeds before sowing and for sprinkling between the rows of plants after growth takes place to ward off attacks of grub. We think it will be found at that strength a safe application to apply to plants in firm full foliage. We hope during the coming season to make some experiments, and will in due course record the result. We should not apply it to the *Asparagus* beds.

VINES UNREQUITTED (Idem).—We think the foliage is too crowded—unnecessarily exposed to light and air, the wood not being thoroughly ripened. Allow the intervals of the vines to be 18 inches to 2 feet apart, stopping them at the first tendril or at the sixth leaf, and at every leaf afterwards, the laterals being stopped to one leaf. Afford plenty of air when the wood is ripening, with fire heat, so as to induce it to become brown and hard. You will find further remarks on this subject in another column.

DIVIDING ALPINE AURICULAS (F. J.).—Do not do so until the flowering is past and the plants are beginning to have a slight growth, as if you take them up, separate into as many parts as the plants have crowns, securing each division with a portion of root, and plant up to the base of the leaves, watering until established.

GOLD FISH (Idem).—Could any of our correspondents oblige us with particulars of their treatment in a pond in the garden?

RAISING OF FRUIT TREES (John Elliott).—In vol. xii, page 88, you will find an account of "The Royal Pear" as raised by Mr. Hulse, Mr. Knight's experiment on fertilisation, and the form of its small book entitled "A Treatise on the Culture of the Apple and the Pear."

SEEDLING PANISSE (W. G.).—The two dark selfs are very good, but none of the other flowers sent combine good shape with stout petals and clearly defined colours. Some of them may be attractive for garden decoration, but they are greatly inferior to named varieties.

VEGETABLES ALLOWED TO UNDER-GARDENERS (A. Carleton).—The usual allowance of vegetables to under-gardeners consists of the surplus of such as are served to the servants' hall department of an establishment, and which if not used would spoil. Potatoes are, if the kitchen be served by or through the garden department, allowed to under-gardeners living on the premises, but when Potatoes are purchased for the family they are not usually allowed to under-gardeners, unless of course special arrangements are made. It is very unusual to allow vegetables to under-gardeners lodging off the premises. We hope shortly to offer some remarks upon the subject.

BRODIAEA CULTURE (Arthur T. Webb).—There is a general resemblance in all the *Brodiaeas*, but each kind possesses distinct features, such as are found in size of foliage, length of flower spike, form, size, and colour of flowers. Of the two kinds you mention *B. grandiflora* has small loose trusses of bright blue flowers with one slender foxtail-like branch or scape about a foot high, and *B. congesta* has much bolder compact trusses of pale blue flowers so numerous as to offer a striking contrast to those of *grandiflora*. To these you should add the bright crimson *B. coelestis*; under good culture it is remarkably effective, the flower spikes reaching a height of 3 feet and bearing large tubular flowers of a singular form, which are 1 1/2 inches in length. When grown in pots they are potted in October in soil consisting of equal proportions of loam, peat, and sand, and placed in a cold frame or pit till active growth begins, when due care must be taken to afford water and air, for the plants are then much more tender than when in the ground, but this space is an object which will answer perfectly well in the pit till the flowers appear. When planted in an open border, damp low-lying places should be

avoided, and due care taken to prepare the soil before planting. As a general rule we advise that all bulbs should have as good and carefully prepared soil in the open ground as in pots. This applies especially forcibly to new gardeners, many a valuable batch of bulbs having been lost through planting in a crude or ungenial soil.

VALLOPA FORTUEA (D. M.).—The plants should be potted early in the spring if required, encouraging their growth by sprinkling overhead an copious waterings. In June they may be placed outdoors in an open situation, watering copiously and removing to a greenhouse or room window when the flower spikes appear. Cultural notes on this useful autumn decorative plant will shortly be published.

PLANTING POTATOES (Reader).—When the sets have been small and the rows nearly 24 feet, we have most eight sacks sufficient to plant an acre of ground; when the sets have been larger we have required ten sacks, or even more.

SETTING CANNON BOILERS (Horne Lodge).—You may have the boiler set its proper way without interfering with the circulation of the water to any serious extent. It is not material as to the distance between the flow and return pipes, but the circulation is best when the return enters the boiler at its lowest part, the flow being at the highest; but we have one similar to yours and the circulation though slow is complete. The depth of the furnace calculating from the grate bar to the lower central convexity of the boiler is 9 inches, and in length 18 inches; but without good stoking and fuel of slow combustion such small furnaces require frequent attention.

WEED IN WHEAT FIELD (Branchley).—It is the Corn Buttercup (*Ranunculus arvensis*), which flowers during May amongst the young corn, its three-lobed leaves giving rise to the name of "clock wheel." It is best proceeded against by hoeing before it flowers. Hoeing being now almost abandoned in the cultivation of cereal crops, hence the increase of weeds by their being allowed to seed, and the best remedy is a Wheat crop, or what is better, a root crop, and drain the soil if required.

DESTROYING WEEDS IN GRAVEL WALKS (Suberster, St. Bridgid).—We have no experience of vitriol except for destroying coarse weeds such as Thistle, Dandelion, Plantain, &c., but the following application is very effective:—Dissolve 1 lb. of powdered arsenic in three gallons of cold water, boil and keep stirring, then add seven gallons of kerosene and 1 lb. of kerosene, stir the whole well while boiling, and with a rose watering-pot apply to the walks in dry weather from March to May. It may be applied cold, but is best used hot, placing an inclining board at the sides of the walk to keep the hot liquid from the Box or Grass. The above quantity is sufficient for 25 square yards.

CALICO LIGHTS (Lidem).—Pale lined oil three pints, sugar of lead 1 oz., white resin 4 ozs. Grind the sugar of lead with a little of the oil, adding the other ingredients, incorporating the whole thoroughly in a large iron pot over a gentle fire, and apply hot with a large brush to the calico tacked loosely on the frame. The following day tack on to the frame tightly. These frames are very useful to ward off heavy rains, and for affording shelter and shade.

GLAZING VINEY (P. W.).—We should glaze the house with 21-oz. sheet glass throughout, the other glass you name not being necessary for either the Vines or plants.

GREEN FLY ON PEACH TREES (G. C.).—Tobacco smoke properly applied is a certain cure for green fly, but it often causes the flowers of plants to fall off. Fumigating Peach trees and after flowering will save them from the ravages of green fly. Trees on walls out of doors are difficult to manage when green fly attacks them. We use a rich cloth to cover the wall and trees, syringe it well to thicken the cloth, and then fill the space between it and the wall with tobacco smoke, and afterwards syringe the fly off.

NAMES OF PLANTS (E. R. M.).—*Polemoniumeruleum variegatum.*

POULTRY, BEE, AND PIGEON CHRONICLE.

BIRDS AND TELEGRAPH WIRES.

We had no idea when writing on the "Dangers of Birds" two or three weeks ago that the subject would have been interesting to so many. We have had, however, so many letters asking for further information as to what birds were killed most frequently in the time when there were but two or three wires running along the line of railway, that we have made further inquiries from a most responsible person, who has supplied us with the following information concerning the birds which have come into his own hands.

He has had Partridges in abundance and a few Pheasants, also some few Wood Pigeons; but these did not come into his possession in large numbers, although his neighbourhood abounded with them. Of Hawks he has no less than seven hobbies, three of which he now has set up in his own collection. They were all males except one. One of them was killed close by Mr. Keynes's celebrated rose gardens near Salisbury, and another of them had his wing cut off by the wires. He also obtained from Devonshire very many tawny Owls and several barn Owls. Cuckoos, Wrynecks; and Doves, too, in great numbers were picked up on the line in his neighbourhood and brought to him. He also tells us that he has never come across Rooks, Crows, or Magpies killed in this way—in fact none of the Crow family; neither has he ever had Martins or Swallows. These birds apparently were able to keep out of such dangers.

Of smaller birds he tells us great numbers were continually being picked up under the wires, especially Larks, but it was no small number also of Thrushes, Fieldfares, Blackbirds, Redwings, Yellow Buntings, Chaffinches, and Robins, the latter being nearly always killed at early dawn. He also found one Ring Ouzel, Lapwings, Wild Ducks, Jack and common Snipes, Thick-necked Bustards or Norfolk Plovers, also Golden and common Plovers. In one morning in October he found five of

the latter species lying dead all close together. Wagtails, too, need to be found in numbers, generally in the autumn, when many of them had got into flocks for migration, and these most especially near Chard, where they used to congregate in the osier beds. It was not, however, from flocks in migratory flights that the greatest number met their deaths, but nearly always when they were out seeking their food; and they were most generally found in a valley, when the birds flying from the hills could not see the few wires which then existed, as they were against the light.

These birds were all picked up in the years of 1857—1860. As soon as the number of the telegraph wires were increased, most perceptibly did the number of deaths occasioned by them decrease, and now when there are eighteen or twenty wires the mortality among the birds from this cause is almost nothing in comparison to former times. We can, then, easily realise what a startling number of birds must have been annually killed in past years, for all those which we have mentioned were either picked up by or came casually into one man's possession, and he has now many of them exquisitely set up and ossed in memory of those murderous times. One or two have written to us saying that it was impossible for three men to have in one season picked up 361 Partridges on eight and a half miles of line. We can, however, assure them that it was the case, and that even since writing at that time we have again verified the statement, and would again tell our readers that it was on the L. & S.W.R. that this occurred, which line of railway runs through some of the very best Partridge shooting in the south of England.

While on the subject, however, of wild birds and their foes, we are glad to hear that an officer of the Society for Prevention of Cruelty to Animals seized upon a large quantity of young Blackbirds and Thrushes which were exposed for sale at Romford a week or two back, contrary to the Wild Fowl Protection Act; and, again, we learn that one of the London bird-osteothers has been brought to book, for last week at Wandsworth George Smith, a bird-catcher, was charged with taking a nest containing some young Linnets, contrary to the byelaws of the Conservators of Wimbledon Common. The charge was proved, and the culprit was fined 40s., or in default of payment to undergo fourteen days' imprisonment. From this we can see that there are people on the alert to do what they can to protect our wild songsters.—W.

EXHIBITORS—DEALERS AND BREEDERS.

Who or what is to be praised—the high breed and fine condition of the bird, or the exhibitor? Most certainly the breed and condition. These guide the decision. Why, then, must the merit of the birds shown be slighted because their owner is a dealer? If they are, there should be an animal's protection society, and fowls so treated should be handed over to its care. Why should we behave so jealously and ungratefully to the dealer? Does he deserve it? Is it a fitting reward for his labour? Here we have examples of dealers who are such strong fanciers they ruin themselves in pursuit of their hobby, and as an appreciation of their efforts they are to be excluded from competition. Why does the dealer wish to exhibit? Because he is not without ambition, and he desires a premium or distinction for some breed he has imported with much expense and trouble. He will support the shows where he is allowed to exhibit openly, and must take other steps where he is slighted.

He has a friend, a shoemaker, named Crippin; he has a pair of Turtle Doves under his bench which, of course, have young ones; he is, then, a breeder. The dealer has recourse to him, and by his instrumentality he can show his birds. He seeks no unfair advantage; if he did he would not be allowed to obtain it. He does right. My friend, why does envy make that eye blind with which you should see yourself? How often has the breeder helped you? He has answered all your demands, and enabled you to improve your breed. He has made you a better breeder than you ever had before. They have been praised as your breeding, and all the thanks he gets are—"You can go about your business."—(Translated from the "Geflügel Blätter.")

ROSSENDALE POULTRY, &c., SHOW.

This Show was held at Newchurch on the 5th inst. Clark's pens were used, and the whole of the birds were shown in the open air; the day was fine, which contributed largely to the success of the Show. The entries in poultry, Pigeons, and Rabbits were about 370.

Game headed the list with a small entry for the amount given, but the birds were good and the awards well made. Spanish only two, and Dorkings four. The Cochins and Brahmans were very good classes, and while the entries were but small in the *Hamburgh* classes the quality was such as is not easily surpassed. Game Bantams, Black Red were very good; first an old pair, and second and third birds of last year. In the variety of Bantams, first was a good pair of Pekins, and

became more interested in the Barb, and concluded to strengthen my stud by the importation of some better birds. In this I was very successful, as they have all taken premiums at our principal shows. Having related how I became a Barb fancier, I will now give a description of their principal points and how I breed them.

The skull I consider to be the most important point. It should be broad flat, and even—the same width at front as at back. We cannot give too much weight to this point, as it gives the head a very neat appearance, whereas a tapering skull gives the bird a coarse ugly look. The beak should be short, thick, and inclining downward, with the lower mandible seeming to support the upper. The eye-wattle should be large, round, and even, or the same distance from centre of eye to outside of wattle at every point, rising a little above the head and standing out from it. The edges of the eye-wattle should be very thick; the iris should be white or pearl excepting in Whites, which have dark eyes. I have heard of Whites with pearl eyes, but they are very scarce and I have never been able to procure any. The neck should be of medium length and slim, especially where it joins the head, with a clean curve under the gullet. In this I differ from Mr. Fulton, as he advocates a thick neck and full gullet, which I think detracts much from their neat trim appearance. The body should measure about 14 inches from beak to end of tail: with its short legs and nicely arched neck, in all it is a very neat, tidy little bird, and as beautiful as any of my breed we have. I have noticed persons outside the fancy admiring them very much upon seeing them in the show room. Our object in breeding is to improve upon the original stock if possible, and in order to do this we must mate our best birds together. A great many make a fatal mistake here; if they have one very fine pair and one ordinary pair they will cross the two pairs, hoping by that means to improve the whole stock, but instead of which they reduce it to the level of the ordinary birds. I am breeding a very fine Black cock to a Dun hen, his equal in all points; this pair I have never seen equalled in quality. The cock has a broad flat, even skull, $\frac{1}{2}$ inch between eye-wattles. Eye wattles $\frac{3}{4}$ inch in diameter, beak short, heavy, inclining downward, and measuring $1\frac{1}{2}$ inch from centre of eye to point of beak, with a good even beak-wattle. From these I expect some very fine young, as they are both from excellent stock. My second pair is Dun cock and Black hen. The cock is very large with a broad massive skull, good in all points, but rather coarse. His hen is a very fine bird, even in all Barb points, and a capital match for him. Another pair is Black cock and Yellow hen. The cock is good in all points with the exception of skull, which is the required width but tapers a little; the Yellow hen supplies the deficiency, as she has a very fine even skull. I am breeding also from young birds. After the present breeding season I will give the result of my experiments both in colour and other points. I am breeding from fifteen pairs of all colours, having birds mated-up as follows: Black cock to Dun hen, Black cock to Black hen, Black cock to Yellow hen, Black cock to Red hen, Dun cock to Black hen, Yellow cock to Yellow hen, Yellow cock to Red hen, and Red cock to Red hen.—BARK.—(*American Fanciers' Journal*).

THE BULLFINCH.

WHERE has the humanity of our friend "WILTSHIRE RECTOR" gone to? He is the last I should have thought of as advising the extermination of this beautiful bird. "Do not exterminate the hedgehog," says "WILTSHIRE RECTOR," but "Bullfinches must be shot down or killed in some humane manner." Now this bird is not only beautiful in plumage and handsome in form, but he has a very sweet natural song. As a cage bird there is none more pleasing in all respects. True, he has not the loud defiant song of the Chaffinch, nor the sharp pert song of the Goldfinch; his song is low but very sweet, and there is no bird of his size more observant and acute in all his senses, as is proved by his powers shown under tuition.

But what of his depredations? Is poor Bully to stand the whole brunt? I throw sentiment to the winds here and do with class men alone—those who value fruit above all, or those whose livelihood depends on fruit. Are there no Sparrows in the neighbourhood of the gardens referred to? I can tell of their "mornings" work. Close to my bedroom window grows a large pear tree, a great bearer, and being an early riser I see what is going on when many people are still in bed. I see the Sparrows cutting down the blossom buds by the dozen when the buds are at a certain stage; and then as to the gooseberries, they do not even leave the buds "on the extreme ends" of the branches.

There are no Bullfinches within twenty miles of Glasgow, therefore they cannot be blamed for this work, but it is the work of the Sparrows alone, as I have watched them and frightened them away often. Then my peas; I have had to sow a third time in one season before sufficient appeared above ground as make a decent show—all the work of the Sparrow; but we are told that the Sparrow does a more-than-counterbalancing good by the destruction of insects during the season,

and that therefore his faults ought to be overlooked. Be this so, and why not overlook the faults of the Bullfinch as well, if he really be a depredator? The Sparrow feeds upon almost everything eatable, the Bullfinch feeds principally on insects. All who have studied the domestic economy of birds must know this, and such being the case surely he must do his part in a much larger measure in keeping down the destructive insects which might otherwise prove fatal to our crops year by year.

In looking over the remarks of that distinguished naturalist Mr. Thomas Edward Banff I find he says of the Bullfinch: "Great numbers are annually destroyed by gardeners and nurserymen, who believe that they are destructive, yet their principal food consists of insects, and insects are also the food of their young. I hope a better day will arrive for these lovely little birds, when they will be cherished and encouraged rather than hated and destroyed." I am sorry that I cannot agree with "WILTSHIRE RECTOR's" method of preserving blossoms of fruits. Suppose it were generally acted upon—shoot down the Bullfinch "with no sparing hand"; in fact, wage a war of extermination of Bullfinches in the south or wherever they are to be found; do the same with the Sparrows in the north, and when a man finds any particular bird an annoyance root it out. Let every Blackbird and Thrush fall by the gun in case they should attack the ripe fruit at the end of the season. Let every Pigeon at large be killed, because I find they pick the hearts out of my few young ten-week chickens. What would our gardens, lawns, and fields be without those

"Beautiful creatures of freedom and light?"

Silent? awe, dead to sound, dead to motion, even worse than dead—crawling with loathsome and destructive vermin. I protest against the proposition, and appeal to all who may read this to spare the Bullfinch as one of the most beautiful specimens of our Maker's handiwork. Rather make use of one of those less expensive and simpler appliances advertised so generally for the protection of fruit trees, and the result will be plenty of fruit, beautiful birds, and varied song all around, quite equal to the finest "horists' flowers."

Since writing the above I have read "WILTSHIRE RECTOR's" second anathema on the Bullfinch. His arguments make it no clearer that the Bullfinch does the damage said to be done by him; but allowing it to be the case, is this lovely bird to be made "winter game," or for the sake of a few bushels of fruit? To the same certain hardheartedness, cruelty, or fearful ignorance in the south unknown in the north. I hardly know what to term it, but in going through some of the markets I am struck with this—I see Blackbirds, Thrushes, Robins, Larks, &c., hung up by the legs for sale. I refer at present to St. John's market, Liverpool; there I have seen that grand songster the Lark for sale at 1s. per dozen, plucked, dragged, and spitted! Twelve of those thrilling songsters run through on one wooden spit ready for the fire, price 1s. Pray, what damage do they do? and yet they are netted or shot by the thousand every year.—JAMES HUE.

THE CHALLENGE.

THROUGH the challenge given some weeks ago to test the powers of several kinds of hives has not been accepted, I have not relinquished the hope that a trial of this kind, fair and friendly, will yet be undertaken. Such a trial would excite a healthy and lively interest in apian circles. In offering "to comply with any reasonable conditions," I tried to cover a wide field and give ample scope for any preferences, and I did not anticipate that anyone would misunderstand my meaning. It appears to me that the competing hives should be placed in one garden and all be treated alike or managed on the same principle, in the absence of interested parties. I cannot imagine anything fairer or more satisfactory than this. Suppose a gentleman of the Stewarton school were to decide that the test should be "quantity and excellence of super honey," his proposal would be quite reasonable. I had not the faintest idea of settling the matter by mere weight of the contents of large hives on one side, and weight of super honey on the other. These would not be reasonable and fair conditions.

One or two correspondents have objected to the proposal of letting the hives alone till the end of the season, on the ground that the success of some kinds of hives depends on the attention given to them as they require it, or as the season advances. Doubtless there would be a disadvantage in placing several supers on a hive at the commencement of the season, but the disadvantage would be as great on one side as the other. I am of opinion that if the owners of the hives were permitted to meddle with them during the time of trial the results would not be considered satisfactory. If the trial were to come off it should be such, and carried out in such a way, as to command the respect and confidence of all parties. If such a trial ever comes off, one of its most pleasing features will be the fact that the results or harvests of honey obtained came from hives that received no attention whatever during the whole season from March till September. Though the challenge remains unac-

cepted, it is my intention still to prepare some hives for it, that several gentlemen will eventually unite in an effort to have a fair and friendly contest between hives and bees of various kinds. If the competing hives be placed in a good neighbourhood for honey, and be favoured with fine weather, the results will, I believe, be highly instructive, and, on being published, do more to advance bee-keeping than many bee and honey shows.

Some of the readers of this Journal know that a challenge ending with the words, "Come on if you dare," has been given to me. The gentleman who gives the challenge wishes to have his hives under his own care and control, so that the advantages of manipulation may be fully realised. It appears to me that his proposed trial would settle nothing. Even if his conditions were reasonable, it is not at all likely that any peace-loving person would accept a challenge given otherwise than in a friendly manner.—A. PETERREW.

THE ITALIAN ALP BEE.

In those pages which so interestingly record "A DEVONSHIRE BEE-KEEPER'S" early aspirations to possess the *Apis ligustica*, its arrival in England on August 5th, 1859, its dissemination from the Devon apiary of the late Mr. T. W. Woodbury all over the United Kingdom and even the antipodes, the good character borne to the newcomer from far and near—to the advanced apirarian familiar with all this it must seem a work of supererogation, some fifteen years after, to begin rewriting that good character. But unfortunately "old times are changed, old manners gone." A new school of apiculture has arisen in the interim which openly teaches retrogression: the big straw skep, the boxes from the grocer's shop, and the mull-me-tangero system of bee-management, are pronounced the same of perfection. This new school has refused to give the Italian a trial, and cannot perceive the influence of the yellow-jackets on the longevity of the workers, the distance to which the bees fly to forage, at which the queen bee mates and to which drones influence extends—sufficient of itself to cause the name of Woodbury their introducer to descend to latest posterity; while this same new school tarnish (let us hope unwittingly) that honoured name by insinuating that the Italian is the best "only to sell." The fashion is now entering on another phase, and competitive tests are called for which every intelligent bee-keeper has tested for himself long ago, and which others by the expenditure of a few shillings for a queen can satisfy themselves of at any time. The lack of enterprise betrayed by many is evinced by the loud and oft-repeated call, Where is the superiority of the Italian? Echo has only answered, Where? Emboldened by the silence of others "W. J." presumes to answer the question by a reported conversation with no less an authority than the late Mr. Woodbury, to the effect that but for gentleness the Italian was no whit superior to our old aborigines. When matters have reached this climax it behoves someone to come forward to refute such misleading statements; and as one of Mr. Woodbury's original subscribers for the propagation of the Italian, I can very easily set that matter at rest by quoting the following paragraph from page 18 of his treatise, "Bees and Bee-keeping." After adducing numerous instances of their superiority for prolificness and large honey harvests "forced upon me" through them, he concludes as follows—"The foregoing facts speak for themselves; but as information on this point has been very generally asked, I have no hesitation in saying that I believe the Ligurian honey bee infinitely superior in every respect to the only species that we have hitherto become acquainted with."

Whatever vains my testimony on this subject may possess it is at least disinterested, as I have never imported an Italian queen for sale. My sympathies, too, at first were rather against the foreigner, though certainly not to the extent of refusing to give it a fair trial. And did it come and at once conquer? Anything but that. My first stock brought but destruction in its train, being badly infected with foul brood before Mr. Woodbury had discovered the cause of his dwindling apiary. After a time a second stock was procured; again the fell destroyer appeared, and once more I became a bankrupt in the bee way; yet another was obtained to italianise my third stock, and all went well. After passing through such an ordeal sufficient to disgust many a one, my opinion of the value of the Italian bee may best be drawn from the fact that I cannot remember the number of years since a black bee was bred in my apiary.

After careful study and comparison of both varieties I have come to the conclusion that the value of the Italian consists in its beauty, prolificness, power, activity, and, to my view the greatest of all, fresh blood. Let us look at these points.

1. Beauty.—No one who has seen an Italian bee I presume doubts this. Place an Italian and a black bee side by side on a window-pane or compare them on a landing board and decide; again, the bee-keeper who has never witnessed a flight of young yellow-jackets disport themselves with almost fire-fly radiance amongst their more sombre sisters in the clear bright sunshine of a spring day has a sight still in store for him.

2. Prolificness.—This is a point about as difficult to gainsay as

the former, and I need not enlarge on it further than merely point to the first stock of these bees which reached Scotland—an Italian queen placed at the head of common bees, and in one season multiplied into seven, having thrown three swarms, the first of which swarmed once and the second twice. The last swarm weighed 4 lbs. So rapid a rate of increase was pronounced at the time to be unparalleled in the history of Scottish bee-keeping.

3. Power.—That the blacks go down before the Italians is unquestionable. Could space be here afforded for illustration, many a painful instance rises to the mind's eye of the utter destruction to which some apiaries were subjected from the exportness with which the Italian destroyed the black.

4. Activity.—Anyone who has possessed the Italian must have been struck with their quick agile movements as compared with the blacks. They are first on the wing, first to scent the new flower, first to alight on the treasure trove; indeed, I early formed the opinion that our northern region was congenial and in keeping with their alpine home, where Mr. Hermann tells they thrive to an altitude of 4500 feet above sea level, and in the warmer south of Italy they are not found. A leading farmer of our county—whose better-half, during a recent very poor honey season, exhibited the premier super from an Italian stock—was interrogated if it were due to the superiority of the harvesters. His reply was he knew nothing about bees, gave them as wide a berth as possible; but one thing he would vouch for—these yellow customers were first out on his fields in the morning. The early bird caught the worm; he supposed that was about it.

5. Fresh Blood.—In an article which appeared in this Journal last season (No. 788) entitled "Breeding Bees," bearing the initials "A. P." the startling announcement was made that "in-and-in breeding has gone on for generations and ages," and "the conduct of both bees and drones of every hive indicates that in-and-in breeding is a law amongst them, not an exception," whereas the very opposite holds good in all animated nature. I am not aware that we have a more beautiful illustration than in the honey bee of the care provided to avert the evils attendant on forming alliances within the degree of consanguinity, and as such I have always pointed it out to all stock-owning and poultry-keeping friends. Truly though the merest tyro in bee-keeping was aware that for this very purpose the queen bee invariably mates without the hive. She is impelled to do so; and of this I was not in ignorance before the advent of the Italian; for I had often stood watch in hand speculating during the fifteen to twenty minutes the young queens were absent on such trips. Mr. Woodbury then proposed in the most fraternal manner to distribute the Italian for a small nominal charge amongst his subscribers, and in order to preserve these young queens pure from the black drone influence of other apiaries he advised isolation, placing them fully a mile from other bees. I then predicted the shipwreck of the adventure, which unfortunately was too literally fulfilled. Conclusive evidence of what I have here stated may be drawn from the fact that during all the years I have possessed the Italian bee, my apiary being well stocked for most part with strong non-swarming colonies, in every case with an imported queen or Italian of such at their head, and consequently many pure-bred Italian drones, yet notwithstanding I only once succeeded in obtaining pure impregnation, and that could scarcely be classed as an exception to the unvarying rule, because that young queen was bred in early spring long before black drones appeared, and her fertilisation so far as my knowledge could extend was dependant without a choice on Italian drones from another of my colonies, the queen of which, if I remember rightly, was a drone-breeder.

As a set-off for my disappointment I made the irrevocable discovery that the first cross between the young Italian queen and black drone was a larger, more powerful, and much more industrious insect than the pure-bred of either variety; in proof of this I need only point to the honey harvests which I have been enabled to reap in hives possessing amplest facilities for their so doing. I had better at the same time state that such cross I found much more irascible than either pure-bred bee, and I found myself in the sound advice tendered me in no-vacate days by my old preceptor—"Aye, buy the wicked skep; they're fit for the best honey-gatherers."

The potency of the spell exercised by the first cross is apparent and well understood in larger stock than our favourites; for instance, we do not depend for the beef and mutton supply with which to feed the teeming masses of our population on either the high-bred shorthorn or the Leicester, but to crosses from them; and in like manner every poultry-keeper knows it is not his pure-bred fowls but the first cross which fills the egg basket. I disapprove of all mongrels, and carefully weed them out.

From what I have written it may be supposed that the prowess of the Italian in love cannot be maintained equally as in war, but such is far from the case, although it does seem to be ordered that the more agile Italian princess far outstrips her lazier drones in their flights, and forms alliances with the dark

sons of our land. On the other hand, the Italian is equally the favoured swain with the native brummett. In a radius of from one to close on five miles bee line from my apiary crosses from the reversed parentage abound; and as the first, and for several years the only possessor of the Italian in our county, it always afforded me much pleasure to find the humble cottager put out with honest pride his "striped bees," and hear him dilate on the swarming and harvesting feats they performed, sometimes unconscious that it was to the listener he was indebted for the fresh blood he so highly valued; and on disposing of surplus stock the striped livery rates at a higher value, so much so that the gain from the cross has proved the stepping-stone to the pure.

The darkest shadow on the Italian picture is the impossibility for one bee-keeper alone in a district to breed pure, and instead of finding it a larger, to my eye it has always appeared a sharper-ended lesser insect than our old sabbie friends. Again, I was led to believe it to be exceedingly gentle, almost queenly, in the use of its sting—let alone they are exceedingly harmless. Personally we have lived together on the best of terms, possibly on the principle of the fiery colt which knows its master; but I have had assistants who would only approach them with fear and trembling, and they were most discriminating in their attentions to these parties, would decidedly pronounce them much quicker-tempered than the aborigines. The slow lumbering black leisurely circles the head in the first instance to make observations, while the Italian strikes right out when once war is declared.

I am decidedly of opinion that it would amply repay the humblest and poorest cottager to procure at least one Italian queen, and place her daughters at the head of every hive of bees he may possess.—A KENFRESHIRE BEE-KEEPER.

CROSS STICKS.

A CORRESPONDENT, "ZENO," asks how honeycomb can be cut from the sides of heavy hives with cross sticks in them. His hives are home-made and measure 16 by 12 inches, and have four cross sticks in each. Cross sticks are necessary in large straw hives to give support and steadiness to their combs; they are very useful, too, at the crossings, for there the bees have byeways or passages from comb to comb. Without such passages the bees would have to travel long journeys. It would, indeed, be doubling the Cape to them. Without cross sticks large hives could not be turned up, handled, and examined with safety as we do ours very frequently, neither could they be removed from place to place or sent off by road or rail without very great risk and many breakdowns. In the Stewarton hive, for instance, there are no cross sticks, but the danger and difficulty are met by having a number of shallow boxes in one hive, so that there is not much weight or depth of comb in any part of the hive. At the junctions of the boxes in the Stewarton hive the bees will have cross lanes enough.

The bar-frame hive proper, or moveable-comb system, does not admit of cross sticks. The admission of one cross stick in a bar-frame hive would destroy its principle and fasten its combs. In bar-frame hives proper there are no cross lanes from comb to comb, and as their combs are unsupported there is considerable risk run in removing them from place to place in summer. The larger a bar-frame hive is the greater is this risk; and so doubtless they will be made larger year after year, it is to be hoped that some clever bee-keeper will invent or contrive something that will steady and support the combs in bar-frame hives.

In fine honey seasons large hives of every kind become too heavy for keeping. From 20 to 30 lbs. of honey is enough to keep a large stock hive from September to April, and then probably some will remain unconsumed. About 15 lbs. is the average consumption of a good hive in an average winter, but it is well to err on the safe side. We repeat here that one of the greatest difficulties in bee-keeping is to arrange matters and select stock hives at the end of a honey season. A superabundance of honey in stock hives is a hindrance rather than a help to bees. One year we cut about £40 worth of honey from our selected stock hives which had cross sticks in them. No doubt the sticks are in the way a little, but we do as well as we can. We use a carving knife and a comb knife at this work. Of course the combs cut out leave empty spaces in the hives, which have to be refilled by the bees in the spring; and this is an objection to the system, for bees are apt to build drone combs in the spring months. We have frequently used the comb knife in summer and let the bees fill up the spaces in the autumn; and since sugar has become so low in price we have practised more the system of taking all the honey from heavy hives, putting their bees in empty ones and feeding them into stocks. "ZENO" will find that by placing his cross sticks near the centre of his hives, and at least 4 inches above their boards, he will have but little difficulty in cutting combs from heavy hives. A little courage and experience make every operation easy.—A. PETTIGREW.

OUR LETTER BOX.

COCK'S COMB DISCOLORING (E. D.).—We advise you to give the bird a tablespoonful of water cold at once, and to repeat the dose every other day till the comb returns to its natural colour. Your feeding is very good save the green meat. A fowl will not eat out grass, nor does it care for cabbage leaves. It wants something; that will bear a pull, such as a large sod of earth covered with grass. The resistance excites the birds, and they tear the grass to pieces. They discover lots of food in the earth, and they eat it. They also eat much of the earth itself. It keeps them in health.

SWANS (E. B.).—Swans vary in the number of eggs they lay; between five and nine. There is no fixed time of incubation, but it is generally thirty days. The uncertainty of their hatching has perhaps given rise to the common belief that a swan can only hatch during a thunderstorm. The cygnets may be pined with seven or eight weeks.

COLOR OF THE EYES IN ENGLISH OWLS (Reader).—In all Owl Pigeons, except the Whites, the eyes should be of an orange-red color. In Whites they should be "bull" — i. e., dark, and apparently all pupil.

DRIVING BEES.—"G. C. Croxson," says, "I took the honey from my bees last year and fed them well up with syrup. This spring I have fed them gently. They are now numerous and healthy. Suppose they swarm in May or June, do I understand correctly that twenty-one days after they swarm is the best time to drive the bees and take the honey?" Yes, if the hive has considerable stores of honey at that time and you wish to obtain it. Twenty-one days or thereabouts is the best time to drive the bees into an empty hive; but it does not follow that they will require to be fed with syrup, for the bees will not starve, and, as a rule, they will not require any artificial feeding. On the twenty-first day after swarming a hive has no brood in it save a few cells of drones, which are twenty-four days in being hatched.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 52' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.						IN THE DAY.						RAIN.
	Baromet. (at 30° Fahr.)		Hygrometer.		Direction of Wind.	Temp. of Air (at 5 feet).	Shade Temperature.		Radiation Temperature.		In. On grass.		
	Bar.	Therm.	Dry.	Wet.			Max.	Min.	In.	On grass.			
1877.													
May.													
We. 2	31.832	45.7	88.3	E.	deg.	deg.	deg.	deg.	deg.	deg.	In.		
Th. 3	30.098	46.1	42.2	N.E.	44.2	62.2	59.7	91.4	97.8	24.8	—		
Fri. 4	31.064	45.7	59.9	N.E.	45.6	63.5	59.2	92.3	101.3	27.8	—		
Sat. 5	29.823	44.9	38.6	N.	43.9	59.9	59.7	111.2	25.7	—			
Sun. 6	29.847	45.5	38.8	S.E.	44.0	59.9	61.1	101.2	27.4	—			
Mo. 7	29.754	45.6	46.5	S.E.	41.7	65.4	64.1	107.6	30.6	—			
Tu. 8	29.974	46.4	46.9	N.	46.5	66.6	67.0	107.4	28.2	—			
Means	29.993	45.8	41.5		44.6	59.9	62.9	101.8	26.2				

REMARKS.

- 2nd.—Dull early, but getting gradually brighter; occasional gleams of sun in the after part of the day.
- 3rd.—Fine morning and forenoon; a few drops of rain about 2 P.M. dull afternoon; cold all day and still in night.
- 4th.—Very fine and bright all the forenoon, rather less so in the afternoon, but bright starry night.
- 5th.—Very bright all the fore part of the day, rather less so towards evening, but again a very fine night.
- 6th.—Bright and fine all day and night, but still cold except in the sun.
- 7th.—Another fine day and much warmer, but the night cold and starry.
- 8th.—Much warmer; a bright, enjoyable day, much more summer-like than the Continent, such as Assens, Lyons, French Bains, Carrots, Turpie, Artichokes, and new Potatoes, thereby helping to keep things at their proper level.

The barometer of the week very cold, especially at night, the mean of the night temperatures being 6° lower than last week. Very sharp frost on the nights of the 2nd, 3rd, 4th, and 5th.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 9.

Business has been somewhat quieter during the week, and with a fair supply of best goods prices have given way. All outdoor vegetables are coming short and advancing in value, but large quantities and their way from the Continent, such as Asparagus, French Beans, Carrots, Turnip, Artichokes, and new Potatoes, thereby helping to keep things at their proper level.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....doz	1	0	0	0	Oranges.....doz	1	10	0	0
Pears.....doz	12	0	0	0	Peaches.....doz	10	0	0	0
Figs.....doz	0	0	0	0	Figs, kitchen.....doz	0	0	0	0
Cobs.....lb	1	0	1	6	dessert.....doz	5	0	12	0
Grapes, hothouse.....lb	6	0	12	0	Pine Apples.....lb	3	0	6	0
Lemons.....doz	0	10	0	0	Strawberries.....doz	0	0	0	0
Apricots.....doz	1	6	0	0	Walnuts.....bushel	5	0	8	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....dozen	5	0	0	0	Mushrooms.....pottle	1	5	0	0
Asparagus.....doz	1	0	0	0	Mustard & Cress packet	0	2	0	0
Beans, kidney.....doz	6	0	0	0	Peas, kitchen.....bushel	0	0	0	0
Beet, Red.....dozen	1	6	0	0	pickling.....quart	0	4	0	0
Broccoli.....bushel	0	9	1	0	Parsies.....doz	0	0	0	0
Brussels sprouts.....bushel	3	0	0	0	Peas.....doz	0	0	0	0
Cabbage.....dozen	1	0	0	0	French.....quart	6	0	10	0
Carrots.....bunch	0	4	0	0	Potatoes.....bushel	2	6	4	0
New.....doz	6	0	0	0	Peas.....doz	5	0	6	0
Capercuzes.....doz	1	6	0	0	New.....lb	0	6	1	0
Cauliflower.....dozen	3	0	0	0	Radishes.....doz	0	0	1	0
Celery.....bushel	1	4	0	0	Rhubarb.....bushel	0	0	0	0
Coleworts.....doz	0	0	0	0	Spinach.....bushel	0	0	1	0
Cucumbers.....each	0	1	0	0	Sourzouers.....bushel	1	0	0	0
Endive.....dozen	1	0	0	0	Sesalisk.....bushel	1	0	0	0
Fennel.....bunch	2	0	0	0	Shallots.....lb	0	5	0	0
Garlic.....lb	0	0	0	0	Spinach.....bushel	2	4	0	0
Herbs.....bushel	0	3	0	0	Turnips.....bunch	3	4	0	0
Lettuce.....doz	2	0	0	0	Vegetable Marrows.....doz	0	0	0	0
Leeks.....bunch	0	4	0	0					

WEEKLY CALENDAR.

Day of Month Week.		MAY 17—23, 1877.		Average Temperature near London.		Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.	
Day.	Night.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.	m.	s.	
17	TH	Royal Society at 8 30 p.m.		65.5	41.7	5 46	4 7	7 46	7 28	0 8	4	4	3	49	137				
18	F	Manchester Show commences.		65.3	42.7	5 40	4 5	7 47	8 54	0 36	5	6	47	138					
19	S			66.2	43.1	5 48	4 4	7 43	10 25	1 0	6	8	44	139					
20	SUN	WHIT SUNDAY.		66.3	43.3	5 48	4 3	7 50	11 50	1 17	7	9	41	140					
21	M	WHIT MONDAY. Bank Holiday.		66.3	44.5	5 54	4 3	7 51	0 18	1 51	8	8	38	141					
22	TU	WHIT TUESDAY.		65.5	43.1	5 43	4 0	7 53	2 36	1 48	9	3	54	142					
23	W	Society of Arts at 8 p.m.		67.7	44.9	5 53	3 59	7 54	3 58	1 55	10	3	29	143					

From observations taken near London during forty-three years, the average day temperature of the week is 66.1°; and its night temperature 37.6°.

ROSES.



EEK after week we have roserians turned over the pages of the Rose journal, and, with the exception of a slight squabble about Beauty of Glazenwood, no line has been written upon the subject so dear to our hearts. What is the cause? Is it the east wind which has been blowing here without intermission ever since Easter? or is it that "love is growing cold" and that Roses do not command that devotion they once did, or is it that there is nothing to write about?

Sometimes I think that the second is the real cause—that the rage for Roses and Rose shows is abating, for many signs point to that result. The Crystal Palace has sent out one of the meanest schedules I have ever seen. When first I showed Roses there they gave four prizes to each class; a year or two afterwards they reduced the number to three, and now this year they have docked all the third prizes; they have also taken away the close classes. I mean there is nothing to prevent two men taking the prizes in every class. If two amateurs whom I need not name are in great form they will divide all the prizes, and we poor little exhibitors will be left out in the cold, and I shall have to return to my wood a wilder savage than I came out.

The Aquarium, again, that wonderful establishment which opened without fish, but with such a high-sounding prospectus about educating the nation and elevating the tastes of the people, having now obtained the fish, turn out the flowers, and instead of encouraging the growth of Roses, &c., by holding shows, shoot out young ladies from cannons, &c. The Alexandra Palace re-opens at Whitecliffe, but makes no sign as to a Rose show. As to the Royal Horticultural Society, it appears to be regaining lost ground, and next year we may hope will be able once more to give prizes and hold its usual Rose show. But the result of all that precedes is that we shall only have one Rose show in London or the suburbs worthy of the name—namely, that of the National Rose Society, which we roserians have formed unaided by any of the old societies or companies; so that there is some ground for hinting that concerning Rose shows "love may be growing cold."

Another sign is that, so far as I can hear, this National Rose Society is not making the progress one could wish. And I would urge upon all roserians—upon all men and women who love Roses whether they show them or not, to support this Society by becoming members. The subscription to the Society is only 10s., and for which tickets to the Show in St. James's Hall will be given which will admit before the general public. The fixture, July 4th, is, as it turns out, one of the very best that could have been made. I never knew Roses so backward as they are here in the west. Hercules and I pruned late on purpose to suit the National, and as it has turned out we could not have done better. The cold

winds that we have had since Easter have kept the Roses back so much that they are now only just shooting, so that I doubt very much whether the Crystal Palace Company will not have to change their day. I never knew a more favourable season than this has been so far for Roses. The mild winter continued till March was nearly over—till we had completed pruning, and then the cold winds began which prevented the Roses growing and so being injured by the frost. I believe that we shall have a splendid season for Roses, although it may be late.

I have lately been observing with great care the growth of different varieties of Tea-scented Roses, and it may not be amiss to state here the results. I have many Teas planted in various aspects and in different soils. Some are on the seedling Briar and some are on the dwarf Briar, and others are worked on tall standards. I have observed the growth of various kinds, and I have come to the conclusion that some of the more recent acquisitions, most beautiful though they are, and to be prized above rubies in a Rose house, are too tender to be grown successfully out of doors. I think it will be granted by my Rose brethren that Comtesse de Nadaillac is one of the loveliest Teas sent out since Catherine Mernet. The growth of this, however, is weak, and it is so excessively tender that outdoor culture under the most favourable circumstances is next to an impossibility. The same remark applies to those gems Madame Jules Margottin and Perle des Jardins, new plants purchased from one of the best houses in the trade. These Roses are on the seedling Briar, and in spite of the mild winter they have all died down to the ground. As soon as we have some mild weather I shall give them a "pick-me-up" in the shape of liquid guano, but I have very faint hopes that they will give good blooms for the shows. Souvenir de Paul Neron grows magnificently with me on the standard, but hardly at all on the seedling Briar. Of other Teas comparatively new and of great beauty I have two which grow splendidly on both stocks—viz., Jean Ducher and Marie Guillot; and yet, strange to say, all these varieties with the solitary exception of Comtesse de Nadaillac are marked "vigorous" in the catalogue of the nurseryman from whom I purchased them.

The most vigorous, however, of all Tea Roses is (with me at least) that priceless jewel Marie Van Houtte, and yet Mr. Cranston calls it a moderate grower in his catalogue, and in answer to my protest assures me that it is a very poor grower with him. I hope anyone who reads these notes will compare them with his own experience and let us know through the Rose journal how these Roses grow with him. Next to Marie Van Houtte I should place Rubens as a grand grower. It is not often you can get a fully-expanded bloom of this variety worth looking at, but what Rose can excel her in the bud? What glorious half-opened blooms does she sometimes give us, unlike any other variety! While she is one of the freest bloomers I know. Then next as a good grower I should place Souvenir d'un Ami, which is one of the grandest of Tea Roses, and not to be surpassed by any other early in the season before the July sun has taken

all colour out of the blooms. After her I place as a free-grower Jean Decher. This variety is not at present much known, but I think it will soon take a foremost place among Teas.

But as I look over my stock and compare notes the conclusion forces itself on my mind, how few good Teas there are which can be cultivated out of doors. They can almost be counted on the fingers of the hands, and I never know how to make up the dozen required at the shows. Here they are according to my judgment—Devoienais, Catherine Mermet, Souvenir d'un Ami, Souvenir d'Elise, Marie Van Houtte, Maréchal Niel (Noisette), Cloth of Gold (Noisette), Belle Lyonnaise. Then we come to an end; the other four must be cut from such varieties as may chance to give us a fair bloom, but which rarely, if ever, do for a show—Niphetos, Madame Willermoz, Comtesse de Nadailac, Marie Guillot, Triomphe de Rennes, Céline Forestier, David Pradel, and Homère. Have we ever seen a first-rate stand of twelve Teas and Noisettes without one or two weak blooms? I have never judged one or seen one anywhere. The problem, then, is (1), How are we to grow very tender Teas out of doors? (2), How are we to retard them enough to show them at the great exhibitions? Mr. George Paul is trying a plan which I tried to describe last year in our Journal, and I shall be most anxious to see how he succeeds this year. The Tea Roses add immensely to the beauty of a stand; and whether or not they ought to have points given to them on account of the difficulty of growing them, I think at least they should have points on account of the light shade that they give to a stand of seventy-two distinct Roses, the great majority of which are always crimson and dark-coloured Hybrid Perpetuals.

There is, however, a good time coming for Tea Roses, as Mr. Boscawen has induced the Bath and West of England Society to give two silver cups at their Show this year. This is to be at Bath, the home of the Tea Rose, and we are sure to have a feast of good things there held, as it is at the very time when Tea Roses are at their best. I consider we owe a deep debt of gratitude to that gentleman for having given us this grand opportunity of showing and seeing the Teas under the most favourable circumstances, and I have every confidence that the result of his exertions will be a magnificent show.

The Torquay Rose Society has, in deference to the protest which they have received against holding a two-days show, determined most wisely and kindly on only holding it on the 28th of June—a spital fixture. But there is one remarkable feature in their schedule upon which I should like to hear Mr. George Paul's opinion. They have decided that Cheshnut Hybrid and Beauty of Glazenwood are to be excluded from the classes for Teas. Concerning the latter I know nothing, but Cheshnut Hybrid is a Rose so extensively grown that this decision comes as a blow in the face to men who, like me, have hailed the advent of Cheshnut Hybrid as an acquisition in giving us a colour to relieve the white and yellow of our stands of Teas. At the same time I think that the Committee is right. Cheshnut Hybrid is not a Tea pure and simple, nor does Mr. George Paul call it so. Although it is in the list of Teas he calls it a Hybrid Tea; but in habit, growth, and leaf it reminds me far more of a Bourbon than a Tea. Still, such an authority as Mr. Reynolds Hole speaks of it as a Rose which on "examination has all the characteristics in wood, leaf, and habit as the Tea-scented China Rose." That good rosarian, Mr. Walters of Exeter, who spends his whole day in his nursery, in speaking of this Rose and praising it said, "Bless you, sir, it is no more a Tea than I am; it is a climbing Bourbon." When doctors differ who shall decide? But the Committee have solved the difficulty so far as they at Torquay are concerned, and they declare that, whatever else it may be, it is not a Tea.—WILD SAVAGE.

KITCHEN GARDEN ARRANGEMENT.

AMONGST the customs which have taken deep root in the gardening world is that of having borders and rows of fruit trees (more or less tortured with the view of getting them into some ideal shape which but few ever attain), running parallel with every walk in the kitchen garden. I dare say this answers very well in small gardens where the proprietor is his own head gardener, or where the work is not too much for one trusty man to do all; but in larger establishments, where the kitchen garden covers from three to ten or more acres, it is questionable if this arrangement is the best.

I am of decided opinion that it is more economical, and that better results are attainable, by having vegetables by themselves and fruits by themselves as much as possible. Those who cannot see any beauty or take any interest in a well-kept vegetable garden are to be pitied, but it seems to me that the usual arrangement starts with the idea that there is something loathsome in growing Cabbages, and that we must screen such crops from the eye of the refined, and therefore rows of pigmy trees are planted to separate the ornamental (?) from the useful. If the screen is to be a perfect one, the trees cannot be of much use, as they must be crowded; on the other hand, if the usefulness of the trees is studied, glimpses between them will often reveal a state of things not quite in harmony with themselves and the borders. Such borders and such trees entail an immense amount of labour; and as there are not many gardens where there is more than a sufficiency even when used economically, it is plain that if the borders get more than their share something else must go short, and too often the result is to be seen immediately behind the trees and borders in the shape of poor, scanty, and unclean crops of vegetables, which are an eyesore all the summer and a source of vexation and trouble through the winter.

The remedy for this state of things is,—first of all to acknowledge that a continuous supply of good vegetables, including salad, is often the most difficult as well as the most important part of a gardener's duties. Much skill and attention are required to have Cabbages early in April; Peas from May to November; Lettuces, Broccoli, or Cauliflower always. Yet these and other equally important crops have to be provided, and the reason the gardener of the period does not fail oftener than he does in this direction is, perhaps, because he generally has some good, useful, though it may be despised, kitchen-garden labourers to prompt him.

But labour to be used economically must all be directed from a central head where all details are understood. It is human nature to be selfish, and we cannot expect a man whose time is solely occupied with growing vegetables to care very much for fruit trees, and the chances are that a root on which the life of a favourite tree depends may be ruthlessly amputated for the sake of growing an extra Cauliflower. I have had many trees on the Paradise and Quince stocks seriously injured with the spade and fork before I fenced them off from ordinary labourers. The mischief was not done wilfully, but merely through a lack of sympathy. We know that a workman who takes an interest in what he is doing is worth twice as much as one who only looks forward for night. Perhaps all are not capable of interesting themselves in gardening matters; they may not have the requisite talent, or their interest may lie in another direction, but wherever ability or taste show themselves they ought to be utilised and cultivated by means of heaping responsibility on the shoulders of the possessors, for depend upon it there is nothing can make men of us so quickly as responsibility.

The work of one department ought to be separated as much as possible from that of another, so that the man in charge of the one may devote his time and attention to the natural difficulties, of which there are sure to be enough, and that he may not have to contend with difficulties made by the thoughtlessness of those belonging to another department.

In the vegetable garden I prefer to see the crops running in lines parallel with and at right angles to the main walks and coming close up to them, every variety being carefully labelled where it can be read from the walk, and all kept in the highest style of cultivation. This is simpler, more systematic, and more economical than the usual arrangement, and there are not many proprietors who would fail to interest themselves as much in a crop of Onions averaging three-quarters of a pound in weight as they would in a row of prettily trained but often fruitless Pear trees.

Borders there are against the walls, and these are useful for forwarding or retarding according to aspect, but no ordinary labourer's spade must come within 6 feet of the wall if the fruit trees are expected to flourish.—WILLIAM TAYLOR.

VALLOTA PURPUREA CULTURE.

AS the finest of bulbous window plants, the most useful of late summer greenhouse evergreens, and most gorgeous of plants for massing to flower in September and October, the Vallota merits notice. As a window plant grow it in a pot of twice the diameter of the bulbs, and after draining sufficiently employ a compost of turfy loam and one part of leaf soil or

thoroughly decayed manure for the plants to grow in. Potting is best done in early spring, the plants having been kept rather dry over the winter. In potting most of the old soil should be removed, in fact all that can be removed with a pointed piece of wood, and the plant be returned to the same or a slightly increased size of pot. Young plants will, of course, require an increased size of pot; but a 7 or 8-inch pot is quite large enough for those with three or more flowering bulbs. At potting there is no need to remove the offsets, they take nothing from the parent bulb; yet when each bulb has not room to swell, then the offsets should be removed. Water should be given rather sparingly; but as the plants produce fresh foliage water should be given more copiously until growth is complete, and then only sufficient need be given to maintain the foliage fresh. After the middle of June a position outdoors in a sunny situation is as good as any, affording water freely, removing the plants to a window when showing for bloom.

When grown in a greenhouse very similar treatment is required, but as larger plants can be accommodated there than in a window, they may have a slightly increased size of pot each year, only removing any bulbs that crowd too much, in which way very effective plants may be had. Single bulbs are always useful; they may be grown in 6 or 7-inch pots. If a portion of the plants are placed outdoors in June on ashes in an open situation sheltered from winds and duly supplied with water, they will flower later than those retained in the greenhouse in a light airy position, forming, if moved under glass when the flower scapes appear, a good succession. We do not report our plants oftener than every second year, and no plants could be more satisfactory. The plants are kept moist at all times, drier of course after flowering than when growing, increasing the supply with the growth. No plants could flower more freely; all they want is abundance of light and air and free watering when growing.

For a display outdoors a situation should be chosen open yet sheltered from winds, the plants being planted in the beds early in June, and only attended to with water if dry weather ensue. In September and early October a display of bright flowers may be looked for that will eclipse in brilliancy the most sensational of bedding plants. They should be planted closely, so as to form a mass. After flowering, or in October, they may be taken up, potted, and wintered in a greenhouse or pit—any place having light—with safety from frost.—A.

CULTIVATION OF TURNIPS.

The Turnip is such a useful vegetable that every person who has a garden grows it to a certain extent, but in many cases it is not cultivated so largely as it ought to be. I do not mean that it should be grown in great breadths, but small quantities should be grown for succession over a period of eight or ten months. Turnips may be had nearly all the year round with very little trouble, provided due attention is paid in selecting suitable varieties and they are sown at the proper time.

For the earliest supply I sowed about two dozen 12-foot rows of Snowball on a south border the first week in March. The weather since has been against them, and although they are now showing large rough leaves, subsequent sowings will soon come up to them. However, in favourable weather those sown about the beginning of March will be ready for use by the end of May. From the 1st of March until now two sowings are sufficient to give a fair supply, but after this time a row or two should be sown every fortnight until the end of July, as during the hot weather of July and August the bulbs soon become hot and stringy, and sowing often is the only and never-failing mode of insuring a constant supply of tender young Turnips.

I never sow any Turnip seed in open spaces until all the vacant parts between Gooseberry and Currant bushes have been filled up. A row is also run down between the Raspberries and young plantations of Rhubarb. All these shaded parts do well for the early crops, but the autumn and early winter crops must have an exposed situation.

In choosing the ground avoid clay soil, and select a part that has had some early Potatoes or some such opening crop on it. Soil that has been mixed with ashes does capitally for Turnips. I have sown Snowball until the end of June, and no better could be had until then; but after the beginning of July, and especially at the end of that month when the winter crop has to be sown, a hardy sort must be selected. I have tried a number of sorts for sowing then, and I now prefer Chirk Castle to any other. It is exceedingly hardy and swells out

freely until the new year, and after that I know of no quick-growing variety that will not bolt; therefore to make sure of a supply in the spring months a good patch of the Swede must be sown. This is a splendid hardy Turnip, and always good in flavour from November until March. I have sown about a score long rows of it to-day (May 8th), but it may be sown with the same results for the next three weeks.

Never sow Turnip seed thickly, as it germinates very freely. The rows should be from 15 to 18 inches apart. The drills may be from 1½ to 2 inches deep. Always leave the soil over the seeds rather rough, but at the same time never let any large clods remain that will hinder the young plants from pushing up. Thin-out from 8 to 12 inches apart as soon as the young plants have formed from four to six leaves. Hoe amongst them frequently, and never allow them to become choked with weeds.—M. M. P.

CRYSTAL PALACE SUMMER SHOW.

MAY 12TH.

WHEN the schedule for this Show was issued and it was found that third prizes were abolished, also that such short notice of the event was given to exhibitors, it was considered by many that the Show would not be equal to the exhibitions of previous years. Bearing in mind that "general impression," the exhibition of last Saturday must be described as satisfactory. A principal factor contributing to the result is, that it was the first metropolitan exhibition of the year where liberal prizes were provided for specimen plants. The time was also favourable, for other shows closely following gave distant exhibitors the advantage of staging in more than one place at a cost of one "through journey." The schedule also, it must be admitted, was well arranged. Without consisting of a large number of classes (there were only twenty-eight), it was sufficient to ensure a large Show. In nearly every class there was competition, and every exhibitor save one who had entered the lists occupied the space, or more than the space, allotted to him. The Show, therefore, was a large one, and in most respects it was good, but not in all.

To begin with, the £25 provided for nurserymen's stove and greenhouse plants in bloom was not well won, or rather it should be said was not won at all, for we only noticed one collection staged in this class. Orchids were not so numerous as we have seen them at the Palace; and Pelargoniums, Calceolarias, and Cinerarias were below the standard of quality of plants staged in former years, the deficiency on this occasion being a result of the protracted cold weather preventing the plants being "in." On the other hand, however, the picture had a very "bright side," for the stove and greenhouse plants exhibited by amateurs were excellent; and especially so, perhaps, were the ornamental-foliaged plants. Roses were also wonderfully good considering the weather, and Azaleas were both numerous and superior.

Besides an innovation in the compilation of the schedule there was a change also in the arrangement of the plants. At former exhibitions the plants have been disposed on both sides of the central transept, leaving the centre open for promenade. On Saturday, however, the collections were arranged down the centre of the building, and the visitors were divided into two distinct streams. Both plans have their advantages; the latter may be the more convenient, but the former renders an exhibition the more imposing, inasmuch as it presents a much better "general view" being had of the display as a whole. The Show was better, therefore, than at the first glance it appeared to be, and was in fact both an extensive and excellent display. We will now refer to the classes, commencing with—

STOVE AND GREENHOUSE PLANTS IN BLOOM.—In the nurserymen's class for twelve plants Messrs. T. Jackson & Sons, Kingsland, were the only exhibitors, and a second prize was awarded for their collection. In this group we noticed a good *Imantophyllum*, *Aphloxeris*, and *Azalea*. *Rhododendron Princes Alice*, with fine campanulate flowers, was also highly attractive. *Baronia pinata*, *Hestia*, *Statis profusa*, and *Anthurium Scherzerianum* completed the collection.

In the corresponding class for amateurs (nine plants) the exhibitors were Mr. Chapman, gardener to S. Spode, Esq., Hawkesyard Park, Rugeley; Mr. Peed, gardener to Mrs. Treadwell, St. John's Lodge, Lower Norwood; and Mr. E. Tudgey, gardener to T. F. G. Williams, Esq., Henwick Grange, Worcester. Mr. Chapman won with *Chorozemas Chandlerii*, 5 feet in diameter, splendid; *Anthurium Scherzerianum*, 4 feet across and nearly a hundred spathes; *Pimelea mirabilis*, *Erica color rosea*, and *Dracophyllum gracile*, each 4 to 5 feet in diameter; a capital *Ikora*; *Erica Cavendishii*, and two large and well-bloomed *Azaleas*.

Mr. Peed was second. He staged an admirable *Imantophyllum* 4 feet in diameter with twenty fine heads of flowers; five oval-shaped specimens of *Franciscea calycis* and *confertifolia*, *Clerodendron Balfourii*, an immense *Epaoris*, *Erica Caven-*

dishii, a fine pyramid *Azalea exoniensis*, and an excellent specimen of *Rhododendron*. Countess of Haddington. An extra prize was awarded to Mr. Tudgey.

In the amateurs' class for six plants there were four competitors. Mr. Tudgey, gardener to T. F. G. Williams, Esq., winning with *Hedera multiflora*, a perfectly trained and finely grown plant 5 feet in diameter; *Ixora Williamsii*, with very fine trusses; *Erica verticosa magnifica*, a capital *Imantophyllum*, *Anthurium Scherzerianum*, and *Clorodendron Balfourii*. Mr. Chapman was placed second for a very fine *Ixora coccinea* and *Clorodendron Balfourii*, also *Erica verticosa coccinea* minor and *eximia superba*, with flat-topped plants of *Chorozeema varium* and *Hedera multiflora*. An extra second prize was awarded to Mr. Child, and an extra third to Mr. Peed.

In the class for eight *Erica* (open) Messrs. Jackson & Sons, Kingston, had the premier place, with very large plants of *E. albens*, *E. exoniensis*, *E. tricolor*, *Wilmottii*, *E. Cavendishii*, and *E. depressa*, and smaller specimens of *E. ampullacea*, *B. obtata*, and *E. florida*. Mr. Peed was second with an excellent collection, more level in size than the Kingston plants, but not quite so closely grown and trained; and Mr. Legg third. In the amateurs' class for six *Erica* Mr. Legg had the first place with vigorous young plants, admirably grown and trained. *E. tuberosa*, *E. Victoria*, and *E. Cavendishii* were splendid, although the plants were not more than 2½ to 3 feet in diameter. *E. insignis*, *E. depressa*, and *E. Candolleana* were not quite in bloom. Mr. Tudgey was placed second with larger plants, but too thinly trained; an extra prize being awarded to Mr. Peed for healthy grown plants, although greatly varying in size. In this class it was a treat to see such sterling quality as was apparent in Mr. Legg's young specimens and there is every promise that their grower will eventually become as distinguished as a cultivator of hardwooded as he is of fine-foliated plants.

AZALEAS.—These contributed greatly to the effect of the Exhibition. For nine plants (open) Mr. Ratty, gardener to R. Thornton, Esq., The Hoe, Sydenham Hill, was placed first with nine grandly-bloomed *Erica* tricolor specimens. They were of a robustly pyramidal-shaped, 6 to 8 feet high and 4 to 6 feet in diameter at the base, all in admirable condition. *Georgiana*, scarlet; *Criterion*, light pink; and *Mrs. Fry*, rose crimson, were the most effective. The second prize was awarded to Mr. Child; and an extra prize to Mr. Turner, Slough, for naturally grown plants—a refreshing change from the formal masses of colour of closely trained specimens.

In the amateurs' class for six plants Mr. Ratty staged magnificent specimens grown on short single stems, and having heads flatly rounded 6 and 7 feet in diameter. The masses of colour—white, rose, scarlet, and crimson—presented by these plants were very effective. *A. Burlingtonii*, rich pink, and *Princess Charlotte*, pale rose, were especially admired. The second prize went to Mr. J. Child, gardener to Mrs. Torr, Garbraud Hall, Wexham, for plants ranging from 6 to 7 feet in height, oval-shaped, but one or two of them were rather loose. The first in the group was *Duchesse Adelaide de Nassau*, crimson; *Rosa elegantis*, rich pink; and *Criterion*. In the class for twenty *Azalea* in pots not exceeding 9 inches in diameter (open), Mr. Turner, Slough, was placed first for an admirable collection, the plants being pyramidal in outline, but not so closely trained as to hide the foliage. The varieties were also excellent. Conspicuous was *Souvenir du Prince Albert*, pink and white, one of the most distinct and attractive *Azalea* in cultivation. Others exceedingly fine were *Apollo*, white, rose stripe; *Eugène Mazel*, Charles de Buck, rose pink; *Marie Van Houtte*, white; *Reine des Pays Bas*, lilac; *Mrs. Turner*, rose salmon; and *Mons. Cuvelier*, scarlet. *Flag of Truce* and *Bernhard Andreas*, double whites, were also attractive. Mr. Ratty had the second prize in this class with a collection of very great merit.

ROSES.—This was the first "battle of the giants" of the season, but the weather had prevented all the plants being perfect. In the nurserymen's class for nine plants Mr. Charles Turner, The Royal Nurseries, Slough, was placed first with *La France*, very good; *Cécile Forestier*, excellent; *Juno*, *Anna Alexieff*, *Charles Lawson*, very good; very fine *Duke of Edinburgh*, *Victor Verdier*, *Madame Thérèse Levat*, and *Maréchal Vaillant*. The second prize was awarded to Messrs. Paul and Sons, The Old Nurseries, Chessington, for huge examples of *Princess Mary of Cambridge*, *Cécile Forestier*, a grand *Victor Verdier*, *Docteur Andry*, very good; *Madame de St. Joseph*, most excellent; *Horace Vernet*, *Anna Alexieff*, *Madame Victor Verdier*, perfect; and *John Lloppe*. Messrs. Paul's were the larger plants, but the Slough specimens had the finest blooms. The foliage of all was excellent, and the merits of the two collections were nearly equal. For six *Roses* in pots (amateurs) Mr. J. W. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston-on-Thames, was a good first with medium-sized and well-bloomed plants of *Paul Verdier*, *Victor Verdier*, *Madame Alice*, *Geornen*, *Amie Laxton*, *Marquise de Castellane*, and *Madame Villermore*. Mr. W. Philip, gardener to A. Giles Puller, Esq., Youngsbury, Warr. Herts., had the second place. In the open class of twenty *Roses* in pots not to exceed 9 inches

there was only one exhibitor, but right well did Mr. Turner deserve first honours for grand examples of *Madame Lacharme*, *Miss Haesard*, *Royal Standard*, *Rev. J. B. M. Camm*, *Edward Morven*, *Marie Van Houtte*, *La France*, *Madame Thérèse Levat*, &c. The size and quality of the blooms we considered perfect. For decorative purposes in private gardens *Roses*, as exhibited in 9-inch pots by Messrs. Turner and Moorman, are commendable examples of culture which many growers may follow. The "elephants" few can hope to equal.

Magnificent blooms of *Maréchal Niel* (six large boxes containing nearly two hundred blooms), came from Mr. John Mayo, 13, Corn Market, Oxford. Two boxes of splendid blooms in twenty varieties from Mr. Wm. Corp, Oxford. Messrs. Paul and Son exhibited *Roses* in pots—*Magnus Charta*, grand in foliage and bloom; *Bessie Johnson*, *Princess Beatrice*, *Peach Blossom*, *Star of Waltham*; also six boxes of cut blooms. Extra prizes were awarded to these exhibitors.

ORCHIDS.—For ten plants (nurserymen) Mr. B. S. Williams, Holloway, was in his old position—first—with *Vanda tricolor insignis*, *Sobralia macrantha*, *Odontoglossum Pescatorei*, *Oncidium sarraceni*, *Cephaelis nivalis*, a fine pan with twenty-five flowers; *C. villosum*, also fine; *Cattleya Mossii grandiflora*, *Oncidium Marshallii*, *Cypripedium biflorum*, and *Vanda nasvii*. Messrs. Jackson & Son, Kingston, were placed second. They staged a pair of fine *Vandas tricolor*, *formosa* and *insignis*; *Cattleya Mossii superba*, with a dozen flowers; *Odontoglossum Alexandræ*, *Saccolabium retusum* with three fine racemes; *Dendrobium Devonianum*, *Masdevallia Lindenii*, and *Cypripediums*.

In the amateurs' class for twelve plants Mr. Child was placed first. *Oncidium ampliatum majus* in this collection was very fine; it had more than a dozen robust spikes. *Camarotis purpurea*, *Cypripedium Stonei*, and *Cattleya Mossii superba* were also noticeable. Mr. Peed was placed second for a creditable collection. The Orchids, although not numerous, secured a large share of attention from the visitors.

FINE-FOLIATED PLANTS.—In the open class for twelve plants, Mr. Legg, gardener to S. Ball, Esq., Cleveland House, Clapham Park, exhibited plants in his usual finished style. The collection comprised a *Dicksonia*, two grand *Palms*, *Geonoma pumila* and *Stevensonia grandifolia*; magnificently grown *Crotons Weismannii*, variegatum, *Johannii*, and *angustifolia*; *Dracaena Shepherdii*, 9 feet high; *Davallia Mooreana*, 5 feet across; *Alcasia Lowii*, *A. macrorrhiza variegata*, fine; and a *Dasylium*. The first prize was awarded. Mr. Tudgey was placed second with a splendid *Pritchardia pacifica*, *Lantana borbonica*, and *Cycas revoluta*, a very fine *Pandanus Veitchii*, *Crotons*, &c.; an extra third prize being awarded to Mr. Ley, Croydron, for a good collection including *Cocos Weddeliana*, *Yucca filamentosa variegata*, *Alcasia Lowii*, *Dion edule*, &c. In the class for eight fine-foliated plants (amateurs), Mr. Legg again had the premier place with a grand specimen of *Cycas revoluta*, perhaps the best plant extant of *Croton volutum*, *Croton majesticum*, *Diefenbachia nobilis*, *Dracaena Shepherdii*, a good *Phyllostemum Lindenii*, and a green *Pandanus*. Mr. James Ford, gardener to J. G. Megaw, Esq., Windermere House, Lower Norwood, had the second place. In this group *Caladium nymphaeifolium* had magnificent leaves 4 feet long and 3 broad. The old *Begonia arystogina*, named *atroanginea*, was effective. *Croton Wightii*, a *Pennisetum*, *Cissus discolor*, *Croton variegatum*, and *Maranta zebra* were also noticeable in this group.

In the class for nine *Dracenas* (open) Mr. Legg had the first honours for excellently grown plants 3 to 5 feet high of *Fraereri*, *ambalis*, *excelsa*, *Shepherdii*, *Emperor*, *Heendersonii*, *Weismannii*, *Youngii*, and *Dennisonii*. Messrs. Rollison & Sons had the second place with a collection which included the new varieties *Sidneyi*, *terminalis alba*, *recurva*, and *Nitzschnerii*. Mr. Ley also exhibited in this class, the green species *Leuteosus* having a striking effect from its light green renewed foliage.

In the class for nine *Crotons* in pots not exceeding 16 inches in diameter (open), Mr. Wills, Melbourn Nursery, Arlesey, won with remarkably healthy plants, including *C. oxylobium*, *Youngii*, *undulatum*, *multicolor*, *majesticum*, *Veitchii*, &c.; Mr. Ley being placed second with plants varying in size from about 5 inches to 5 feet.

For six *Palms* in pots, distinct (open), the first prize was awarded to Mr. John L. Ley for huge plants of *Chamaerops tomentosa*, *Corypha australis*, *Pritchardia pacifica*, *Euterpe edulis*, *Geonoma Schottiana*, and *Astrocaryum mexicanum*. Mr. Legg was placed second with smaller but excellently-grown plants of such choice sorts as *Cocos Weddeliana*, *Verschaffeltia splendida*, *Demonorops perianthus*, *D. palmibancus*, and *Martensia osona*. An extra prize was awarded to Mr. B. S. Williams for a fine group.

In the class for twelve stout and green-house Ferns (open) there was a very keen competition, six collections being staged; first honours going to Mr. B. S. Williams, Holloway, for splendid plants of *Dicranella anacrotica*, *Gleichenia spiculosa*, *rapensis*, and *dicarpa*, *Davallia Mooreana*, *Asplenium nidus*, *Cyathea medullaris*, and *Phlebodium subauriculatum*. Mr. E.

Tudgay, gardener to T. F. Williams, Esq., was second with excellent specimens.

Six collections of six plants suitable for dinner table were staged. The first prize was awarded to Mr. J. Lambert, gardener to H. W. Segeleke, Esq., Herne Hill, Dulwich, for graceful plants of *Cocos Weddelliana*, *Geonoma gracilis*, *Demonorops pambanensis*, *Dracena gracilis*, *Pandanus javanicus*, and *Croton antioxiifolium*. Mr. Wills, Melbourne Nursery, was a close second, having staged an admirable collection. The first prize for eight Pelargoniums in 8-inch pots Mr. Charles Turner was awarded a first prize. In the corresponding class for amateurs Mr. James, gardener to W. F. Watson, Esq., Redless, Isleworth, was the only exhibitor, and to him first honours were awarded for eight very even and well-bloomed plants. In classes 20 and 21 (for eight fascias), the first for nurserymen, the other for amateurs, Mr. Turner and Mr. James were the only exhibitors, and were awarded first prizes. Pelargoniums, however, were not superior, nearly all the plants showing signs of having been advanced in a close artificially heated atmosphere.

For nine *Calceolarias* Mr. Salter, Laurie Park, Sydenham, was first; Mr. James, Redless, second; and Mr. Bridgeway, gardener to G. Campbell, Esq., South Dulwich, third. The date, however, was too early for *Calceolarias* as well as for Pelargoniums.

For nine *Cinerarias* (open) Mr. James staged excellent plants of *Thomas Bower*, crimson, and *Purple Gem*, two fine selfs; also *Princess of Wales*, Her Majesty, *Cometium*, *Favourite*, and *Lord G. Hamilton*. He was the only exhibitor, and was awarded the first prize.

For twenty-four Alpines and Herbaceous plants (open) Mr. Robert Parker, Exotic Nurseries, Tooting, had first honours for a very good collection, including fine pots of *Soillas* in five varieties, *Polygonatum multiflorum*, *Doronicum austricum*, *Symphylum caucasicum*. Amongst the dwarfier plants were *Lithospermum prostratum*, *Adyestium orientale*, *Phlox Nelsoni*, *Caltha palustris*, *Alyseum saxatile*, *Iberis Garretiana*, *Cheranthus Dillenii*, and *Saxifraga Stansfieldii*. Mr. Coppin, The Rose Nurseries, Shirley, Oxford, staged capital plants of tri-color *Pelargonium* 3 feet over, and excellent trusses of *Verbenas* in twelve varieties; and Mr. Hooper, Bath, *Maréchal Niel* Roses and *Pansies*, the latter commanding a large share of attention. Especially fine were *Jupiter*, yellow and black; *La Brillante*, orange red; *Mrs. Bull*, violet; *Dawn of Day*, blue; and *The Dove*, white.

Miscellaneous collections of plants were staged by Messrs. Rollison & Sons, Tooting; Mr. Laing, The Nurseries, Forest Hill; and Mr. Wills, the collection of the last-named exhibitor consisting of a grand display of *Dracenas* which Mr. Banas has raised and cultivated. They were deservedly admired. Mr. James Chundfield, gardener to H. Littleton, Esq., Westwood House, Sydenham, exhibited some good *Cucumbers* of *Telegraph*, *Tender* and *True*, and *Kirkless Hall* Defiance. The second variety named, however, did not appear to be "true," the fruit being neither so short in the neck nor so deep in colour as this variety is when exhibited by its raiser Mr. Douglas. First-class certificates were awarded to Mr. E. S. Williams for *Maranta Massangana*, *Bertolonia Van Houttei*, *Panax laciniatus*, *Aralia gracillima*, *Lomaria discolor*, *Phyllanthus roseopictus*; Mr. Charles Turner for *Azalea Jean Vervaene*; Messrs. Paul & Son, Cheesbunt, for *Rose Emily Laxton*; Mr. Henry Hooper for *Panay New Guinea*.

Besides withholding third prizes from the schedule the Company was further economical in withholding breakfast tickets from the exhibitors and without having given notice of the change. Complaints were heard also that tickets enabling those in charge of the plants to pass in and out of the Palace were not distributed as usual, and one assistant has complained to us of having been a prisoner in the building from 4 o'clock a.m. to 10 p.m. Many will regret to hear also that the services of Mr. Wilson are no longer at the command of exhibitors. Mr. Wilson's aid was very valuable at flower shows as well as at exhibitions of poultry, birds, &c., but his term of twenty-five years of service was suddenly terminated on Saturday last in the interests of "economy."

EARLY VERSUS LATE SOWING OF SEEDS.

NEARLY every person who has a kitchen garden is always anxious to sow the seeds of the principal crops as early as possible in spring. I have been inclined the same way myself, and have acted accordingly in this and former years; but I have quite made up my mind that in future I will sow no kitchen-garden seeds out of doors earlier than the first week in April, and only then if the weather be favourable. I can give plenty of reasons for coming to this decision, and by stating a few of them they may correspond so far with the experience of others that they may do the same as I intend doing.

Our early Peas, Carrots, Cauliflowers, &c., are raised under glass, and I will not refer further to them. We sowed our

Onions the first week in March, and taking the advantage of a good day a few short rows of Peas were put in at the same time, as were also Early Horn Carrots, Snowball Turnip on a south border, and small patches of all kinds of Greens, including Cauliflowers, Savoys, Brussels Sprouts, Lettuce, &c. The plants from another sowing of all these crops made exactly one month later are now (May 4th) in advance of the first-sown crops, and apart from their forwardness the plants from the last-sown seed are much the healthiest-looking, as they have not that "stand-still" appearance about them so characteristic of all plants which have had to struggle long for an existence in a young state.

I did not make a second sowing of Onions, but Leeks and Onions just take about the same time to come above ground, and the Leeks sown a month later than the Onions are now abreast of them. The Onions have come up well enough, but they have not moved in the least for the last three weeks, and if they had been sown as late as the Leeks they would have continued growing without ever being checked. The Early Horn Carrots are no further advanced than the later-sown main crop of James's Scarlet. Although sometimes cold, we have not had much frost this spring; but it is not this kind of weather that does the most harm to the young seedlings. A wet, stiff, cold soil is far more against them.

It is very seldom that the surface of the ground will break fine and freely early in March, and after the seed has been covered if rain comes in any great quantity the surface of the ground becomes hard and cold. This is what my early plants have had to contend against this spring, and I might be caught the same way another year; but I will not risk it, because I am now satisfied that I can have as early and better crops from seed sown the first week in April as that sown the first week in March, and all uneasiness about failure is avoided.—A KITCHEN GARDENER.

UNHEALTHY VINES.

In a vinery in which the Vines broke about the 1st of February the young bunches in half the house have nearly all dropped off before blooming. It is a very old house, quite noted for its abundant bearing hitherto. The warmest part has lost nearly the entire crop. In the cooler end some rods are good, and the bunches have been thinned. The Grapes are swelling, and are about the size of No. 1 shot. The house is heated by flues, and the Vines are planted inside and run through arches into an outside border which has been well manured. The Vines are nearly all Black Hamburgs. The soil is heavy and is well drained. I have enclosed a couple of the bunches, and should feel obliged if you will inform me what is the cause of the bunches dying, and what I can do to remedy the mischief another year.—H., Maldon.

[We publish the above letter as an example of many others of the same nature which we have received during the past month. We have never received so many complaints before as have been addressed to us during the present season on "bunches shrivelling," "shoots decaying," "foliage scalding," &c. We suspect that the primary cause of the evil complained of is to be found in the excessive wet of last autumn and winter. In the particular case of "H. Maldon," (which is typical of many others), we opine that the "heavy soil" of the Vine border was so saturated that the Vine roots (which were freely produced after the autumn rains, the temperature of the ground being then unusually high in consequence of the hot summer) decayed to a considerable extent. The stored-up sap in the rods was sufficient to promote growth up to a certain stage, but the roots were wanting to sustain and perfect that growth, hence the failure of the early Vines, the late Vines having had time afforded them to form fresh roots to support the foliage and crop. Timely and sound advice bearing on this question was given some time ago by Mr. Douglas in his useful "Doings." His Vines, like many others, were not breaking well, and he had recourse to a steady low temperature until fresh roots had time to form in the borders to support the growth. That his practice was right the present condition of the Vines at Loxford testifies. We saw them the other day, and they are in excellent health. Had he increased the heat of his vinery by way of forcing the Vines into growth he would have erred, as we are afraid others have erred. The many examples of shrivelled bunches and decayed growths which have been sent to us all tend to force us to the conclusion that the growth of the Vines has been unduly accelerated before the roots were in an active state. The stored-up

sap in the Vines became exhausted before the means of supplying necessary and supplementary food from the border were afforded, hence a check was received, resulting in shrivelled bunches and decayed shoots. The right practice to adopt in securing future crops was sufficiently detailed last week by Mr. Luckhurst, and we recommend a careful perusal of his article on pp. 345-6.—[Eds.]

ROYAL HORTICULTURAL SOCIETY.

MAY 15TH.

CONSIDERING that this was merely a fortnightly meeting and not a "show" as generally understood, the display provided in the conservatory was a varied and attractive one. Only a small quantity of fruit was exhibited, but several plants were brought before the Floral Committee, and a few very good miscellaneous collections were staged—namely, Orchids from Sir Trevor Lawrence, Bart.; Roses in pots from Messrs. Veitch & Sons, Chelsea; Azaleas from Mr. C. Turner, Slough; Clematises from Mr. Noble, Bagshot; Orchids and Ferns from Mr. Wills; cut Roses from Messrs. W. Paul & Son; and a miscellaneous collection of greenhouse plants from Messrs. W. Cutbush & Sons.

FRUIT COMMITTEE.—Henry Webb, Esq., in the chair. A very good dish of Grosse Mignonne Peaches was sent by Mr. Samuel Jenks, gardener to D. Larnach, Esq., Brambletye, East Grinstead, Sussex, for which a cultural commendation was awarded. A Green and Scarlet-flesh Melon were sent by Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury. The Green-fleshed variety was not in condition, and the Scarlet-fleshed form is of the Scarlet Gem type, but was not thought to be an improvement on that sort. A white-spined Cucumber was sent by Mr. Booth, gardener to J. Omsaston, Esq., Omsaston Manor, Derby, but it was not thought to be equal to others in its class. Letters of thanks were ordered to be sent to both exhibitors. Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, sent specimens of Tender and True Cucumber to show that fruit with a small neck and fruit of an even thickness throughout were produced on the same branch. A letter of thanks was voted.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. The Orchids from Sir Trevor Lawrence (grown by Mr. Spiers) comprised *Oncidium crispum grandiflorum*, with four expanded flowers. These were more than 3 inches in diameter, and were very striking. It resembles a fine form of *O. c. Forbesii*, and was awarded a first-class certificate. *Odontoglossum citrosum roseum* had three spikes and upwards of forty splendid rose-tinted flowers; *O. Andersonianum* had a grand spike of richly spotted flowers; *O. triumphans superbum* was also in excellent condition. The distinct *Oncidium metallicum* was well represented. *Cattleya Schilleriana*, probably the finest plant ever exhibited, had seven flowers; and *Honletia Lowii* had two was-like sulphur-coloured flowers—curious, attractive, and profitably perfumed. To the last-named plant a botanical certificate was awarded.

Messrs. Veitch's Roses were in 8 and 9-inch pots. The plants were splendidly grown and bloomed—were in fact perfect plants for conservatory decoration. They were extremely dwarf, each carrying from twelve to twenty blooms, and the foliage was as good as the flowers. Amongst the Teas *Perfection de Mant-plaisir*, rich yellow, was in beautiful condition; *Marie Guillot* was also good, and *Alba roses splendide*. One of the blooms on the plant we never saw equalled. *Céline Forestier* was in perfect condition. John Stuart Mill, Beauty of Waltham, Paul Verdier, Pierre Notting, and Duke of Edinburgh were noteworthy amongst the dark varieties; and amongst the lights *Madame Lacharme* had fine blooms but not pure. *Captaine Christy* was remarkably good, as were also *Baronne de Rothschild* and *La France*. A silver medal was awarded.

The Azaleas exhibited by Mr. Turner were mostly the same effective medium-sized plants which were staged at the Crystal Palace last Saturday, and which are noticed in our report of the Show. One, however, not noticed there is *Flambeau*, rich crimson scarlet, highly effective. *A. sinensis*, orange yellow, very valuable for decorative purposes; *Jean Vervane*, a fine continental variety, rosy salmon fringed with white, were exhibited by Mr. Turner. The last-named variety has been previously certificated, and is worthy of the notice of cultivators. A silver gilt medal was awarded for this collection.

Amongst Mr. Noble's Clematises we noticed *O. Torrisona* as being distinct in colour, very pale lavender shot with rose. Of the lilac-purple varieties *Margaret Dunbar* and *The President* were very fine, and *Xerxes* was conspicuous from its rich colour and maroon band.

Mr. Wills's group was small but attractive owing to the simplicity of its arrangement. The groundwork was composed of small plants of *Adiantum cuneatum*, amongst which were irregularly disposed a few choice *Odontoglossums*. A bronze medal was awarded.

The collection of Messrs. Cutbush was composed of Palms,

Dracænas, *Rhododendrons*, *Cornus cardinalis*, several *Ericas* (*E. mirabilis* being especially attractive), *Boronia*s, *Genetyllis*, *Lilies*, and a pretty old greenhouse plant, *Hypocalymna robusta*—a very good group, for which a silver medal was awarded.

Messrs. Paul & Sons' cut Roses comprised sixty varieties. Amongst the Teas *Souvenir d'un Ami*, *Marie Van Houtte*, *Ni-photes*, *President*, *Climbing Devonensis*, and especially *Rubens*, were in charming condition. *Cheburnt Hybrid* was also superlily shown. *Beauty of Waltham*, *Princess Beatrice*, *Madame Nachury*, and *Duchess of Edinburgh* were also admirably represented. A bronze medal was awarded for the collection. Messrs. J. Mayo & Son, Cornmarket Street, Oxford, exhibited upwards of sixty blooms of *Maréchal Niel*, *Roses* in excellent condition; and were awarded a bronze medal.

Messrs. Veitch exhibited four varieties of *Azalea mollis*—*Flambeau* and *aurantiaca*, orange; *Comte de Gomer*, delicate pink; and *Coeur de Paille*, soft buff colour, very pure and fine—for which a first-class certificate was awarded. A similar award was made to the same firm for a new *Dracæna* from the South Sea Islands. This, which is named *Robinsoniana*, is highly distinct and very promising. The plant is of stately growth, the leaves being olive green striped with creamy white and rose. The new unfolding leaves are especially attractive. Messrs. Veitch also exhibited *Dracæna speciosa*, *Crinum Mackoyanum*, and *Adiantum emulum*, an elegant Fern, intermediate in appearance between *A. formosum* and *A. cuneatum*. Messrs. Veitch also exhibited the new American *Hydrangea* *Thomas Hogg*; but it is not yet pure white, although the green tinge in the petals appears to be disappearing. The Committee desired to see it again.

H. J. Elwea, Esq., Preston, Cirencoستر, sent flowers of *Ellenæ longipetala*, a curious and pretty *Panorantium-lili* flower; *Calceolaria crenatiflora*, pure yellow; *Tulipa undulatifolia*, to which a vote of thanks was awarded; and *Cypripedium candidum*, a hardy species, extremely attractive. The slipper of the flower is a pure ivory white, the stem and sepal orange with brown spots, and the sepals brown. It is a charming species, and was introduced from North America in 1826.

Mr. Cannell exhibited his new striped *Geranium New Life*, scarlet with flakes of white and rose—with a good-formed flower. A vote of thanks was awarded.

Mr. Ollerhead, gardener to Sir H. W. Peck, Bart., Wimbledon House, exhibited a spray of *Aristolochia arnhemphala* with four remarkable flowers. The correct name of this, however, was stated to be *A. braziliensis*. A vote of thanks was awarded to the exhibitor. Mr. Bell, The Nursery, Lakenham, Norwich, exhibited *Adiantum Capillus-Veneris* var. *corymbiferum*, the fronds being crested like those of *A. Luddemanianum*. Mr. Dean exhibited *Mimulus*, *Polyanthuses*, cut blooms of *Pansies*, and a few Alpine plants; and J. D. Llewellyn, Esq., sent an unnamed crimson *Azalea*.

ROYAL BOTANIC SOCIETY'S SUMMER SHOW.

MAY 16TH.

At few places are better plants exhibited than at the first Summer Show at Regent's Park, and few places are better calculated to show them to advantage than the large marquee with its hollow central ground and bold turf-covered elevations, rising tier above tier, yet sufficiently isolated to permit all the collections being conveniently inspected. The four half-circular groups in the centre of the msrquee were contributed as follows:—A grand display of *Rhododendrons* and Japanese Maples from Messrs. Veitch; also a fine group of *Roses* fringed with cut-leaved Maples; an attractive collection of decorative plants from Messrs. John Laing & Co., Forest Hill; and a very large and excellent group of Tree Ferns, Orchids, and fine-foliated plants from Mr. B. S. Williams. For these groups extra prizes were awarded. The collections in competition were arranged on the grass terraces surrounding the marquee, the flowering plants on the projecting monads, the Ferns and fine-foliated plants in the recesses. The general appearance of the Show was very rich, and it must be pronounced as one of the best exhibitions of recent years.

In nurserymen's principal class for twelve stove and greenhouse plants in flower first honours were secured by Messrs. Jackson & Son, Kingston, who had evidently reserved themselves for the event, for the specimens were vastly superior to those which they staged at the Crystal Palace. The collection comprised two *Azaleas*, three *Heaths*, two *Apelelexes*, a *Statice*, *Imnathophyllum*, *Hedera*, and *Rhododendron*. Mr. B. S. Williams had the second place with a splendid group. It contained a remarkable specimen of *Clerodendron Balfourii*, an immense *Erica Cavendishiana*, a fine example of *Ixora Williamsii*, *Azaleas*, *Heaths*, *Apelelexis*, *Azalea Criterion*, and *Aethurium Scherzerianum*. Mr. Peed, Roupell Park Nurseries, Norwood Park, had the third prize for smaller yet creditable specimens.

In the corresponding class for amateurs (ten plants), Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, Rugeley,

had the place of honour with the same splendid specimens which won at the Palace. Mr. Peed was placed second and Mr. Tudgey third. An extra prize was awarded to Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart. In the amateurs' classes for six plants Mr. Tudgey was first, Mr. Chapman second, and Mr. Legg third for admirable collections, an extra prize going to Mr. Child. Amongst nurserymen (six plants) Messrs. Jackson & Sons were first, and Mr. B. S. Williams second.

ORCHIDS.—These were not so numerous as we have seen them on former occasions. In the amateurs' class for six plants the first prize went to Mr. Denning, gardener to Lord Londesborough, for *Montezuma citreum* with three grand spikes, O. Pescatorei, O. Koczii, *Dendrobium Parishii*, *Cattleya anperba*, and *Acrias Veitchii*, all in splendid condition. Mr. Child was second with *Oncidium ampliatum majus*, very fine; *Acrias Fieldingii*, two *Cypripediums*, a *Cattleya* and *Vanda*. Mr. Newman, gardener to W. H. Michael, Esq., Highgate, was placed third for *Dendrobium Falconeri*, very fine; D. Wardianum, *Phalenopsis Lüdemanniana*, *Cypripedium Stonei*, and *C. niveum*. An extra prize was worthily awarded to Mr. Heims, gardener to F. A. Philbrick, Esq., Q.C., who exhibited a splendid plant of *Dendrobium densiflorum*, also *Phalenopsis grandiflora aurea*, *Odontoglossum Alexandræ*, and *Epidendrum vitellinum majus* in capital condition. Mr. Heims also exhibited a good miscellaneous collection. In the classes for nurserymen Mr. B. S. Williams was in his usual place and had the first prize, Messrs. Jackson & Son being placed second. The plants are nearly all named in the Crystal Palace report. They had a very rich effect.

ROSES.—The specimens in these classes were splendid. Mr. Turner's plants were in grand condition and commanded all the chief prizes. There were three nurserymen's classes and an open class, but no special class for amateurs—an oversight possibly, for what plants are more worthy of cultivation and encouragement than Roses in 8-inch pots? They ought to be as generally grown as Pelargoniums. In the open class for six Roses in pots Mr. Charles Turner, Royal Nurseries, Slough, exhibited magnificent examples of Paul Perras, Céline Forestier, Paul Verdier, Duke of Edinburgh, Edward Morren, and Jeno, to which the first prize was awarded; the second going to Messrs. Paul & Son, The Old Nurseries, Cheshunt, for plants scarcely less inferior to the first-prize collection. Charles Lawson, Victor Verdier, and Céline Forestier were grand examples of culture. The two sixes may be considered the most perfect plants which have probably ever been exhibited. Mr. J. W. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston-on-Thames, was third with well-bloomed plants of good quality. Mr. Henry Coppin, The Rose Nursery, Crocydon, also exhibited in this class. In the nurserymen's class for nine Roses Mr. Turner was again placed first, and Messrs. Paul & Sons second. Mr. Turner was first in the class for twenty Roses in 8-inch pots, and Messrs. Paul & Sons second.

In the class for six new Roses (nurserymen) Mr. Turner was the only exhibitor, and was deservedly awarded the first prize, four of the varieties staged being of his own raising—Rev. J. B. M. Canon, Miss Hassard, Oxonian, and Royal Standard. *Triomphe de France*, very large, but coarse; and *Président Léon de St. Jean*, a very dark Rose, were the other plants in this class.

AZALEAS.—These contributed greatly to the effect of the Exhibition. In the amateurs' class for six plants the prizes went in the following order:—First, Mr. Ratty, gardener to R. Thornton, Esq., for huge pyramids; second, Mr. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, for his Palace collection; and third, Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart.; *Etoile de Flandre* in this collection was striking from the flowers at the top of the pyramid being scarlet, the other portion of the plant being white. In the nurserymen's class for six plants Mr. Turner had first honours with his naturally-grown plants, *Duchesse de Nassau*, crimson scarlet; *Comtesse de Flandre*, deep rose; and *Madame Cannart d'Hamahe*, white, were splendid in this collection. For twelve greenhouse Azaleas in 12-inch pots Mr. Turner was placed first, and Mr. Ratty second, both with admirably bloomed examples; and for six plants in 12-inch pots Mr. Ratty was first, and Mr. Wheeler second.

HEATHS.—In the nurserymen's class for twelve plants Messrs. Jackson & Sons were the only exhibitors, staging plants from 2 to 3 feet in diameter, but not calling for special comment. They were awarded the first prize. In the amateurs' class for the same number of plants, Mr. Legg, gardener to S. Ralli, Esq., was easily first; *aristata superba* in this collection was grand. Mr. Peed, gardener to Mrs. Treadwell, St. John's Lodge, Norwood, was second; and Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart., third. In the open class for six Heaths the prizes were awarded in the following order:—Mr. Legg first, Mr. Peed second, and Mr. Tudgey third.

FERNS AND FINE-FOLIOLED PLANTS.—In the nurserymen's class for six exotic Ferns Mr. B. S. Williams was invincible. He staged a grand specimen of *Cyathea medullaris*, *Dicksonia antarctica*, *Davallia Mooreana* 6 feet in diameter, and admirable

examples of *Gleichenias speluncæ* and *rupestris*. Mr. Ley, Crocydon, was placed second. In the amateurs' class for six plants Mr. Tudgey had the premier place with *Aleophila australis*, *Dicksonia antarctica*, a *Cyathea*, *Gleichenia*, and *Adiantum farleyense*, all in excellent order. Mr. Wheeler had the second prize.

For six fine-foliage plants (amateurs) Mr. J. Legg was first with his admirable Palace collection. Second, Mr. E. Tudgey; third, Mr. F. Hill, gardener to—Taylor, Esq., Regent's Park. In the corresponding class for nurserymen Mr. B. S. Williams was placed first and Mr. Ley second; and for a group of twelve *Agaves*, *Yuccas*, and *Cycads* the first prize was awarded to Mr. Ley, and second to Mr. B. S. Williams.

PELARGONIUMS.—These were not numerous. In the class for nine plants in 8-inch pots (open), Mr. James, gardener to W. F. Watson, Esq., Redless, Isleworth, was placed first with very even and well-bloomed plants. For six plants (amateurs) Mr. James was again placed first. In the corresponding class for nurserymen Mr. Charles Turner was awarded first honours; *Claribel* and *Maid of Honour* being particularly noticeable in this collection.

For nine *Calceolarias* (open) Mr. James was a good first, his plants being very fine both in habit and bloom; Mr. Coppin was awarded the third prize.

In the class for six old-fashioned plants (open) Mr. W. P. Roberts, gardener to W. J. Terry, Esq., Peterborough House, Fulham, was the only exhibitor, and was awarded a first prize.

NEW PLANTS.—Messrs. W. Rollison & Sons, Tooting, exhibited a remarkable *Azalea indica* *Rollisonii*, stated to be from Japan, and hardy. The plants were only about 6 inches high, with very slender foliage, and fine double, rosy-pink flowers, very distinct and attractive. A certificate was awarded.

Mr. Williams exhibited *Dracæna Rebecce*, terminalis alba (certificated), and *Elizabethæ*; *Croton Andraeanum* (certificated), bold and promising; *C. Victoria*, a brilliantly coloured seedling from *Veisnamii*; *Eranthemum Eldorado*, the cordate leaves being 4 inches long and 2½ broad, green, and conspicuously reticulated with yellowish veins; *Adiantum Williamsii* (certificated), an elegant Maiden-hair with crisped pinnae; and *Microllepia anthriscifolia* (certificated), a small-growing *Davallia*-like Fern of the greatest elegance; also *Aralia filicifolia* (certificated).

Messrs. Hugh Low & Co., Clapton, exhibited *Dendrobium suavisimum* (certificated), a splendid *Dendro* with rich orange flowers, having a bold maroon blotch on the labellum.

Messrs. Veitch staged *Dracæna McArthurii*, very dwarf, and more rich-coloured than *D. Cooperii*; also *D. Robinsoniana*, *Azalea mollis* in variety, *Anthurium Brownii* (botanical certificate), *Selaginella Brownii*, *Lomaria discolor bipinnatifida*, and *Hydrangea Thomas Hogg*. The two plants last named were certificated. Certificates were also awarded to Messrs. G. Jackson & Son, Woking, for *Clematites* *Lady Egmont* and *Florence*; also to Mr. Noble, Bushot, for *Clematites* *Margaret Dumore*, *Madame Torraine*, and *Xerxes*.

Mr. James Kingsley, Boisvay Valley Nursery, Southampton, exhibited a new *Coleus* *Empress of India*, with large velvety foliage blotched with yellow and pink; also *Petunia Mount Beauty*, an immense *Gloxinia*-shaped flower 4 inches in diameter, colour purplish crimson with a white tube veined with purple. It is almost or quite identical with *Dr. Hogg*, a new variety now being sent out by Mr. Cannell.

Messrs. E. G. Henderson & Son, Pine Apple Nursery, exhibited *Mimulus pardinus* (certificated), double, and other fine varieties; *Blandfordia nobilis* grandiflora, and *B. aurea elegans* (certificated), *Mikania scandens variegata*, and *Bouvardias*. Mr. Burley, Brentwood, staged out blooms of *Zonal Pelargoniums*; Messrs. William Paul & Son, Waltham Cross, an extensive and superior collection of *Roses* in pots, also six boxes of cut blooms; Messrs. Harrison, Leicester, new *Giant Mignonette*; Mr. Charles Turner a splendid collection of *Thunb.*, also *Alpine Auriculas*; Mr. J. Mayo, Oxford, *Maréchal Niel* *Roses*; Mr. Noble, Clematites; Mr. Coppin, Shirley, *Tricolor Pelargoniums*, *Verbenas*, and *Roses*. Messrs. W. Cutbush arranged a large and effective group of ornamental-foliaged and flowering plants; and Mr. Parker, Tooting, hardy herbaceous plants. Extra prizes were awarded for these collections.

NOTES AND GLEANINGS.

WE hear that a LARGE ROSE SHOW will be held at the Alexandra Palace on Saturday, June 30th, for which a liberal schedule is being prepared. The schedule will shortly be ready, and may be obtained on application to Mr. John A. McKenzie, 1 and 2, Great Winchester Street Buildings, London, E.C.

THE WHITSUNDALE EXHIBITION OF THE MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY, which opens on Friday the 18th inst. and continues until the 26th, is expected to be a very large one. There are thirty-three classes for ama-

teurs and twenty-five for nurserymen. The prizes in all the classes are good, some of them being very liberal. For twenty plants, ten fine-foliage and ten in flower (amateurs), £60 is offered in three prizes of £30, £20, and £10, and a similar amount is offered for Orchids. In the nurserymen's classes about equally large amounts are offered. In this section £50 is provided for a collection of plants arranged for effect and occupying space 22 feet long and 15 feet wide, the prizes being £25, £15, and £10. On the 25th there is to be a special exhibition of table decorations, Roses, &c., and the National Tulip Society's Show will be held at the same time.

— THE whole of the details connected with the Show of the NATIONAL ROSE SOCIETY are to be entrusted to Mr. W. Newman, who has been so long favourably known to all exhibitors of the Rose as the practical manager of the Crystal Palace flower shows, and afterwards as connected with the Alexandra Palace. Want of space for the Show is the main difficulty, but the Committee had no other alternative in carrying out of their plans of bringing a Rose show to the very centre of the fashionable part of business London. Those who join the Society will obtain two admission tickets, giving them an *entrée* to the Show for an hour before the general public are admitted.

— IN order to meet the views of some exhibitors who are members of the National Rose Association the Committee of the TORBAY HORTICULTURAL SOCIETY have decided to limit the Rose Show to one day—namely, June 23th. Captain Fane Tucker is the secretary.

— WE have received from Mr. Christison, gardener to R. O. White, Esq., The Priory, Lewisham, some blooms of MABÉCHAL NIEL ROSE of splendid quality. We have seen many hundreds of blooms this year, but none superior to these before us, and the foliage is as fine as the flowers. We should be glad to hear how and under what conditions Mr. Christison has grown these grand Roses.

— IT is worthy of record that the fine dish of GROSSE MIGNONNE PEACHES exhibited before the Fruit Committee on the 15th inst., and for which Mr. Jenks of Bramleye was awarded a colonial commendation, were gathered from a medium-sized tree bearing 243 Peaches. The tree has produced a similar crop of fine fruit four years in succession.

— WE some time ago alluded to a collection of ODONTOGLOSSUM VEXILLARIUM in Mr. Bull's nursery at Chelsea. The plants are now flowering, and the effect is quite remarkable. There are 150 plants in from 2 to 5-inch pots, and every plant appears to be producing flowers. The beauty of the collection is highly striking, and it is interesting to note the many varieties there are of this magnificent Orchid. In the same house is an excellent display of another splendid Odontoglossum—O. Roezlii. This collection of Odontoglossums demands mention as the most extensive of its kind that has ever been seen in England, and it is highly worthy of inspection by all who are interested in these splendid flowers.

— A CORRESPONDENT in advocating the CULTURE OF NARCISSES, says they are "Everybody's flowers—that is, they will thrive almost anywhere, in sun or in shade, and in nearly every kind of soil. The different varieties flower over a long period, and no flowers resist the effects of rainy weather so well as do these. The flower buds expand freely when out and placed in water, and they there last in beauty nearly or quite as long as when growing on the plants."

— A GENTLEMAN who has kept a meteorological diary since 1847 says that the present is the most backward spring that has occurred since that year. In his garden at Croydon the first dish of Asparagus is usually cut about the 17th of April, but this year it was not cut until the 11th of May. The latest previous was in 1853, when the first cutting was on the 5th of May.

— A COMMITTEE is in the course of formation with the object of presenting a TESTIMONIAL to Mr. JOSEPH DALE, F.H.S., of the Middle Temple Gardens, London. Mr. Dale, so long ago as 1841, began to ornament the gardens of the Middle Temple with Chrysanthemums, and in 1856 he first published his pamphlet on the cultivation of the flower, which is a guide and text-book still deservedly popular; and his annual exhibition of plants, showing what may be done by judicious management in the heart of a smoky city, has been of inestimable benefit to many. The present, it is believed, offers a fitting opportunity for the Chrysanthemum growers of England to show their appreciation of Mr. Dale's labours, and publicly to

acknowledge the advice and assistance which he has unhesitatingly offered to any floral aspirant who sought information of him. Communications on the subject or donations may be forwarded to Mr. Shirley Hibberd, Hermitage Road, Stoke Newington, Tresurer; or to Mr. J. S. Hodson, Gray's Inn Chambers, 20, High Holborn, Secretary.

— ALTHOUGH vegetables are scarce in many private gardens, COVENT GARDEN MARKET appears to be well supplied. There are many tons of young compactly-hearted Cabbages from the London market grounds, and Pess, Broad and Kidney Beans, and Globe Artichokes are supplied from the south of France. Salading of both English and French growth is plentiful, as well as Asparagus, also Seakale of home growth. Rhubarb is small for the time of year, the best examples we noticed having been sent from Yorkshire; it had been grown under pots. New Potatoes from Jersey are very good, and old tubers from Lincolnshire and Yorkshire look well in the sacks, although we are informed that many of them are slightly diseased.

— A CORRESPONDENT writes to us as follows on forcing FRENCH BEANS in boxes:—"Some time ago I did not see my way clearly to find room for a lot of French Beans in 8-inch pots, which I knew would require a place in some warm house at this time; so in order to economise space I obtained some cutting-boxes, which are 3 feet long by 14 inches wide, and 4 inches deep. These I half-filled with a rich compost of loam and dung. The Beans were then laid in the boxes about 2 inches apart, and covered over until the box were nearly full. They were then watered and placed in a Pine stove. They are now bearing an excellent crop of pods, quite equal in every way to any we have had in pots, and the space saved is considerable."

FOR several seasons the supply of VEGETABLES has not been so limited as during the present spring. Complaints of scarcity reach us from various districts. In by far the greater majority of gardens the deficiency alluded to was quite unpreventable. The hot and dry summer prevented the Brassica crops from making anything like their usual growth. Winter Spinach was unable to resist the continued downpour of the autumn and early winter months, and the protracted cold of spring has prevented such crops as Cabbages and Asparagus from advancing for early use. When we reflect that vegetables are frequently scarce during April and May, it is a little surprising that Seakale is not more largely grown on the simple plan adopted in the London market gardens, and detailed last week by our Fulham correspondent. This crop is so easily grown and so serviceable, that we direct attention to the letter on page 343, while there is yet time for the practice mentioned being carried out to any extent desired.

— A STRIKING example of the advantages of a LOW TEMPERATURE FOR MASEDEVALLIAS was pointed out to us the other day by Mr. Ollerhead. Three plants of M. Harryana are now suspended in a cool Orchid house, and are just expanding their flowers. By far the best plant of the three—the best in foliage and having the finest and the brightest flowers—is the one which has been grown with a night temperature of 45° to 40°, the others which have had a minimum temperature of 55° being wiry in comparison. Masedvallias are distinct and beautiful Orchids, and may be grown better without highly heated structures than with them. Their cultivation on that account should be largely increased. In the nurseries of Messrs. Veitch and Mr. Williams thousands of Masedvallias are growing under "greenhouse treatment."

— THE CUCKOO was heard at Daventry on the 12th inst.

FRUIT-TREE CULTURE.—No. 2.

EXTENSION VERSUS RESTRICTION.

PLUM and other stone fruits differ from Apples and Pears in forming fruit buds upon the current year's growths as well as upon older spurs. Except for the Cherry no dwarfing stock is necessary, the Plum, Apricot, Peach, and Nectarine upon the Plum stock being provided for, the Plum in all its varieties being surface-rooting, by which the cultivator is enabled to have fruitful trees under the utmost limit of restriction. If there is any fault to be found with the Plum as a stock it is that of supplying nutrition in excess of what is required, the food supplied being more than the foliage can appropriate, giving rise to extravasated sap, particularly when the atmosphere is cold: hence I do not wonder at Mr. Taylor encouraging a sucker or two, which, however, is unnecessary whenappy upright growth is checked by lifting. With kinds free in growth

corresponding with the stock and having an early leafage the greatest immunity from gum is found. Take Apricots, for instance. Moorpark and Kaisha are late in leafing, they with me suffer from gum; but Blenheim, Royal, Oullins Early, Hemakirk, and St. Ambrose are free, having a much earlier leafage, do not suffer from gum; neither does Moorpark appear to gum when lifted triennially. In rich moist soils we have the greatest liability to gum, for which there appears no remedy but restriction of the roots by lifting, and warmth so as to induce short-jointed well-ripened wood.

Extension, therefore, is useless against disease, and equally at fault in inducing fruitfulness. In what, then, consist the advantages of the system? The answer of some is, "More wood, larger fruit." But what of its quality? Is it also superior? These questions I leave to be answered by the votaries of extension. If it can be shown that extension is necessary for continued fruitfulness (and I admit that it may be in a few cases, which I shall proceed directly to particularise), then we have to consider if we may not have extension and restriction at the same time; extension, inasmuch as we replace old worn-out parts by more vigorous fruitful growth, and restriction by confining the new growths to the space previously occupied by the old.

Examples of a combination of extension and restriction may be found in most gardens, and very often in the same tree, as in that of a fruit tree only partially covering its allotted space—the terminations of the principal branches are extensions. Extension, however, as generally understood, is the allowing of space for a tree to go on continually increasing in size, and not restricting it to a space of say 20 to 24 feet by 10 or 12 feet against a wall or trellis; or a bush or pyramid not confined to so many square feet of space, but instead affording as many yards as it likes to take. The question involved is, "Is the tree as fruitful when restricted as when allowed extension?" I have no hesitation in submitting that for general purposes the restrictive system is equally satisfactory with the extension; but it is also certain that both may be carried to an extreme. Restriction of the branches alone is useless in restraining undue vigour and inducing fruitfulness. My pyramid trees rebelled against restriction by the knife. They grew more, and became also more unfruitful; but the application of the spade produced fertility.

With the Apricot the case is very similar; long sappy growths are neither healthful nor fruitful. The finest fruit is produced by spurs and shoots of moderate vigour. There is no denying that some trees admit of restriction to a much less extent than others. Some bear well under the closest restriction; others treated in the same manner are unfruitful, though both subjects are under the same cultural and climatic conditions.

The Champagne Gooseberry may not be pruned so closely as Whitesmith or Warrington. Thinning-out old branches and leaving the young wood is the proper course to pursue with the first, it not forming spurs nearly so freely as the last two. In Currants we have the long-jointed Houghton Castle or Victoria not amenable to such close pruning as the Red Dutch. Even in Raspberries the Antwerp will bear much closer shortening than Fastolf.

Of Apples *Mère de Ménage*, Blenheim Orange, and other strong growers do not bear restriction so well as such kinds as Margil and Dumelow's Seedling; whilst in Pears *Jargonelle*, General Todtleben, and *Passa Crassane* are not to be restricted in the same close manner as *Bon Chrétien* (Williams'), *Louise Bonne de Jersey*, *Passa Colmar*, &c.

In Plums there is a great difference in the growth, for Jefferson, Kirke's, and Coe's Golden Drop in desert kinds are very prolific when close pruned, but Belgian Purple, Transparent Gage, and Oullin's Golden do not fruit well when closely spurred. Difference prevails also in Apricots. Royal and St. Ambrose are not so fruitful under the same restriction as Kaisha and Moor Park; and in Peaches Noblesse will not endure the close pruning that may be applied to Royal George.—G. ARBEX.

EWELL CASTLE.

THE SEAT OF A. W. GADESSEN, ESQ.

AMONGST the gardens near London well worthy of a visit at all times of the year are those of Ewell Castle. There are few gardens where more cleanliness is found. Insects are not allowed to exist under glass, nor weeds to be seen outdoors. The flower pots are as clean as if fresh from the pottery, and to that simple yet important matter the health of the plants is, in my opinion, in a great measure attributable. Not a

vestige of moss is to be seen on the soil or the pots, and a decayed leaf or petal is not permitted to remain on the plants. Not one weed could I find in any part of the garden, and in fact on this account some disappointment had a few days ago been experienced when, after a long and careful search, not a sprig of Groundsel could be found for a pet bird. That may be a trifling matter to mention, but it has been left on record by one who is worthy of being listened to that "success is achieved by attending to trifles, and success itself is no trifle."

Ewell Castle is a comparatively modern mansion in the castellated style of architecture, and is owned by a gentleman having considerable possessions in the district, and who is careful that his mansion and its surroundings are at all times in keeping with the position of the family. It is to the gardens, however, that your readers will be more particularly interested, and these I will attempt briefly to describe.

I first entered the flower garden, which is not large. There is an open expanse of lawn surrounded with shrubs, the flower beds being arranged by the sides of the walks. The beds are now bright with spring flowers, such as Pansies, Wallflowers, Arabis, Aubrietias, Phlox frondosa, &c., and the borders in front of the shrubberies are gay with Hyacinths and Tulips. On the lawn are some good Conifers, such as *Pinus Pinsapo*, *P. Nordmanniana*, *P. Cembra*, *Cedrus Deodara* and *C. atlantica*, *Abies excelsa*, and others. These are all named—labels being used which will endure as long as the specimens. These labels are made of glazed earthenware, and are 5 or 6 inches square, the top having a sharp slant, and on this slant the names were cut or have been impressed before the "posts" underwent the process of hardening. The material is imperishable, the names permanent, and the labels themselves immovable by any accident. The tops are only a few inches above ground, and they are neat and inconspicuous. By the side of the terrace walk near the mansion is an old vineyard which is reputed to have produced more prize Grapes than any other house of its size in the country. Both Vines and house are now venerable, but that is not considered a sufficient reason that destruction should follow, but they are treated as good old servants should be treated—with respect. In the grounds contiguous to the lawn are some fine timber trees, a splendid specimen of the Copper Beech and an equally remarkable Turkey Oak being especially commanding.

From the flower garden a shaded semi-wild woodland walk conducts to a mound about half a mile distant from the Castle, and which is known as Queen Elizabeth's Banqueting Hall, the ground being part of Nonsuch Park where that monarch once resided. The foundations of the Banqueting Hall have been carefully preserved and built up to a height of about 4 feet and surrounded with a sunk fence. The ground thus raised may approach about an acre in extent, and is occupied with large forest trees, mostly Larches, and an undergrowth of shrubs. Amongst these shrubs winding walks are formed, and a cool and secluded retreat is provided, which is much enjoyed by the family during the sultry days of summer. No attempt at "gardening" is permitted in the "Hall" or its approaches, but all is appropriately natural; the only suspicion of "care" perceived is that which never obtrudes, yet cannot fail to be noticed—cleanliness.

But what I desire especially to refer to are the plants and house. Adjoining the Castle is the conservatory. It is a large square structure having two central stages and a stage round the side containing some fine specimens of *Camellias* 10 feet by 6; *Cytisus roosemouci*, 7 feet by 5; *Erica Cavendishii*, 5 feet by 4; *Euparis* of sorts, 4 feet through; *Scaevola elegans*, 14 feet by 12, a splendid specimen; and some of the finest *Primulas*, *Cinerarias*, and *Cyclamens* which I have ever seen. These, however, are now fading; but they can be well spared, for they are being replaced by a collection of *Calcarias*. I am not forgetful of the excellent plants which Mr. James and other renowned cultivators stage at the metropolitan exhibitions when I say that it is a long time since such splendid plants have been exhibited in London as are here grown by Mr. Scutt, Mr. Gadesden's skilful gardener. Their luxuriance is remarkable; the plants being about 2 feet in diameter and 18 inches high, the foliage almost hiding the pots, and the flowers being proportionately large. The strain is Mr. James's, and the cultivator has done it ample justice. *Gloxinias* are largely and admirably grown here, many of the seedlings being of great merit, and these with other flowering plants, including *Richardias* with spathes nearly a foot across, render the structure extremely gay. Adjoining the conservatory is a plant stove which I think should be attached

to all conservatories, both as affording a pleasing change and as a great aid to the gardener in cultivating ornamental-foliaged plants. Amongst the Ferns in this stove I noticed *Dicksonia antarctica*, 12 feet high; *Cibotium Barometz*, 12 feet through, a splendid plant; good *Adiantums* of various sorts; *Musa Cavendishii*; *Croton angustifolium* and others 6 to 7 feet through; *Latania borbonica*, 7 feet by 7. Amongst *Orchids* *Dendrobium Devonianum* and *pulchellum* were very fine; these with *Begonias* and other flowering plants produced an admirable effect.

The kitchen garden is a short distance from the mansion. At the entrance to the garden is the head gardener's cottage, which is such a one as every gardener should have. Near the cottage is a lean-to Peach house unheated, yet the trees are bearing an excellent crop of fruit. The next two houses are vineries. The Vines were regarded as "worn out" two years ago, and

the owner contemplated their entire removal. Mr. Scutt, however, on taking charge attempted their renovation, and in August, 1875, renewed the border and lifted the roots, shading the house densely in the meantime, and preserving the foliage by keeping it constantly moist. New roots were speedily formed, and these having good soil and repeated applications of liquid manure imparted fresh vigour to the Vines, which are now in the highest degree satisfactory, and are certain to produce Grapes this year of the first quality. Active root-action, plenty of water, thinly training the shoots, and great cleanliness are the means adopted in Grape-growing at Ewell Castle. None could be better nor more successful, hence the recording of them here. In these houses a number of *Epacris* and other plants which have been used for the conservatory are now making their growth. The next house is a stove, in which is a general collection of flowering plants and Ferns.

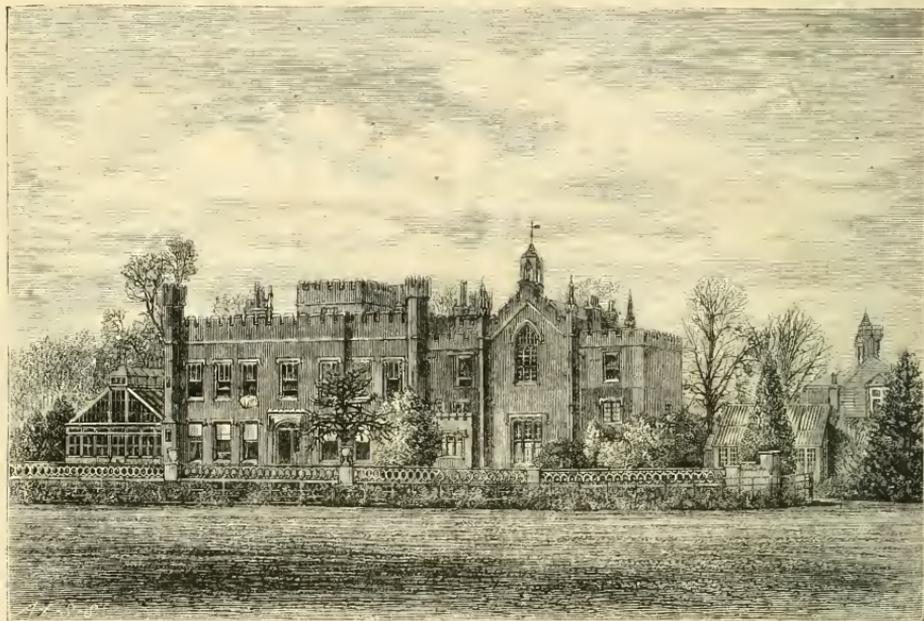


Fig. 40.—EWELL CASTLE.

Near it is a small propagating house, and adjoining this is a greenhouse, in which are more herbaceous *Calceolarias* in 8 and 10-inch pots—plants which are worthy of a place at any exhibition; but Mr. Gadesden likes to see his plants without any broken foliage, and does not approve of showing. In the next house is a clean collection of *Pelargoniums* coming on to succeed the *Calceolarias* in the conservatory, and near this house is a stove containing a general collection of stove plants, *Orchids*, &c. These houses are not large, but are very compact and useful, and are kept in perfect order. There are also frames, &c., for the forcing of vegetables, growing bedding plants, &c. The conservatory and other structures in the garden were erected by Messrs. J. Weeks & Co., Chelsea.

The kitchen garden contains about two acres, and the same neatness and order prevail here as in the pleasure grounds. The fruit trees have been laden with blossom, but it is feared the crop of fruit will be a small one: the frost (14°) has much injured the blossom, also the young shoots of *Peschies*, the growths of *Roses*, and the *Box* edgings of the walks. On the north side of the Castle across the road stands a relic of antiquity—the venerable tower of the old parish church covered from bottom to top with *Ivy*, the remaining portion of the church having been removed. Fortunately Mr. Gadesden has been successful in preserving the tower, for it is one of the finest ornaments of the village. Were the graves in this church-

yard levelled, and the grass neatly mown amongst the shrubs and Conifers, a beautiful little pinetum would be formed, such as any village might be proud of owning.

It is pleasing to record that the services of Mr. Scutt are much appreciated, and that he is indebted to his employer for many acts of kindness.

Ewell Castle is about a mile from Ewell station on the London and South-Western Railway.—D. L.

PHENIX RUPICOLA.

SINCE plants have become so popular for table decoration, also for the ornamentation of rooms in town and country, *Palms* have risen rapidly in public esteem. Not only are they amongst the most elegant of plants, but they are distinct. Their beauty is also long-lasting; in fact, when in good health they are always attractive. Neither is there any real difficulty connected with their culture, for if provided with a moist genial atmosphere and a suitable temperature, and attention also is paid to the simple matter of cleanliness, healthy plants will result with the greatest certainty. In the decoration of stoves and conservatories *Palms* are invaluable, for no plants combine elegance and dignity so emphatically as they do, and none "set-off" flowering plants to greater advantage. *Palms* are not only beautiful at all seasons, but they are attractive in

all stages of growth. When only a few inches high some of the slender growers are amongst the most suitable of dinner-table plants; when larger they are admirable for placing in vases on pedestals; and when they assume more stately proportions they play an important part in the furnishing of halls, &c., and are indispensable for exhibition purposes.

Some Palms are conspicuous by their grandeur, and are of noble growth; others are remarkable for their chaste beauty and slender elegance. To this class *Phoenix rupicola* belongs, which Mr. Bull has recently introduced with the

following correct description:—"This is one of the most exquisitely graceful amongst the smaller Palms, and in elegance takes a similar place among Phœnices to what *Cocoe Weddeliana* does among the species of *Cocoe*. It is of acaulescent habit, with wide-spreading arching pinnate leaves, having a slender rachis and very short petiole, which is dilated at the base and partially encircles the growing point. The fronds are broadly lance-shaped in outline, with long narrow pinnae, the lower of which become gradually reduced to spines. The pinnae are channelled at the base, and appear to be attached



Fig. 47.—*PHOENIX RUPICOLA*.

by the folded base which joins on to the winged rachis, the wings being pressed together along the spaces between the pinnae and continued into the lamina. Some of the lower pinnae and spines are set on in contiguous pairs. It comes from India, and is a most valuable acquisition for collections of ornamental plants, amongst which it will occupy one of the foremost positions." Mr. Bull has enabled us to give the accompanying illustration of this elegant Palm, which cannot but be regarded as an acquisition for various purposes of decoration.

VINE MILDEW.

In the Journal of May the 3rd in the notices to correspondents you recommend "R. M." to use sulphur for the destruction of mildew. Now, I consider a stubborn attack of

mildew on Vines in particular one of the greatest calamities that can overtake a gardener. What can be worse than mildew? To "blight like mildew" is proverbial. I have often wondered that none of your numerous correspondents when writing about mildew have never recommended Ewing's mildew composition as an antidote. For several years in succession our Vines were attacked with mildew, and we dusted them over repeatedly with sulphur, but it was of no avail. As soon as the first speck of mildew appeared sulphur was applied, and notwithstanding all our efforts to impede its progress it still slowly and surely spread all over the Vines. When our efforts with sulphur proved ineffectual I wrote for several bottles of Ewing's mildew wash, and since the first application of the composition, which is several years ago, we have never seen any traces of the insidious enemy. According to the instructions given with each bottle Messrs. Ewing & Co. recom-

mend three applications during the summer, but if one is given before the Vines come into bloom I am of opinion that it will be effectual. The bottles sold at 1s. 6d. each are worth ten times that sum to any gardener who is troubled with this terrible malady. Red spider, mealy bug, and other insects are as effectually destroyed as mildew.—Q. READ.

ARICULAS.

So successful was the National Aricula Society's southern Show; so welcome was it to see new friends made and old friends exchange pleasant greetings; so willingly was aid rendered, and so generally just were the criticisms, that under such circumstances it would be utterly to lack grace to exhibit a trace of unfriendliness to anyone; and on the part of the gentlemen I had the honour to be associated with and for myself I disavow all feelings except those of good fellowship. The few words I have to say to my friend "D." of Deal will be words of brotherly love. I will not dwell on the fact that, though he says "seven exhibitors competed," I paid prize moneys to eleven, for our friend is not great in numbers. But I do ask him to tell me what I am to understand by his statement that "No Aricula grower would, I believe, subject his plants to a higher temperature than that of an ordinary matted frame if he could help it," prefaced as this statement is by the assertion that "The general character of the exhibits bore in many instances unmistakable evidence of having been subject to a higher temperature than the Aricula likes, and there were many plants which, had they not had their crutches, would have been gracefully nodding to the visitors, so drawn were the stems."

Mr. Horner, whose prowess "D." of Deal most properly eulogises, writing of the Aricula in the "Florist" for April, page 74, says, "The work with these plants in April is indeed welcome work, guiding them through their bloom in constant recollection that, though the plant itself is hardy enough, yet the bloom is tender and easily injured. Every grower, whether of a dozen or a thousand plants, and whether he means to exhibit or not, should be determined to take as much pains as if he did. Nothing less will make the bloom satisfactory to him. It is the poorest mistake and the most pitiable of excuses to say 'I do not grow for exhibition, so they will do well enough for me.' No one is fit to be trusted with a plant any more than with a dog if he means to ill-treat it. Like a dog, it is a good thing thrown away upon him, and the sight is grievous." Mr. Horner had previously told us his plants were growing in a greenhouse, and that he had "thought it well to take the chill off" certain nights "with their 12° to 18° of frost," so "kept a quiet fire on."

I ask "D." of Deal therefore to tell us, first, what is the "higher temperature" of the ordinary "matted frame" to which the Aricula may sione properly be subject; and secondly, is he prepared by experience to assert that the bloom can be as successfully developed and the plants less drawn in the ordinary matted frame, subject to the fluctuations of our most variable seasons, than in the house prescribed by Mr. Horner? These are questions worthy of discussion and far removed from personal considerations.—E. S. DODWELL.

OUR BORDER FLOWERS—ALKANETS.

We admit that the Alkanets are a little coarse in habit and appearance, and for that reason they are not always admitted into what are termed dressed grounds. Whatever ideas may be entertained respecting the family in hand, there is that about many of them that is a sufficient recommendation for them to be placed in large borders and other out-of-the-way places which are to be found about both large and small residences, and which require brightening-up a little with the presence of some hardy free-growing plants. Take for instance *Anchea italica*; when well established and growing from 3 to 5 feet in height and properly staked, we have not a more attractive herbaceous plant in our borders. It blooms a long time, is of a beautiful light-blue colour, and lives for many years. It is increased by division in the spring.

The Evergreen Alkanet (*Anchea sempervivens*) is a useful plant for covering naked spaces in shrubberies, and for borders too, where its intense blue flowers are very attractive; being a native species, when established it only requires to be left alone. It is increased by seed and division.

There are many more kinds from other parts of the world, such as *Anchea crispa*, *A. paniculata*, and *A. officinalis*, which

are worthy of cultivation. *Anchea tinctoria* is possessed of colouring properties, and is valuable as an article of commerce. The colouring principle is insoluble in water, but imparts to alcohol, wax, and other unctuous substances a deep red colour; it is sometimes used to give colour to adulterated wines, oils, lip-salves, &c. It is a native of France, the Levant, and other parts of Europe, and thrives in good sandy loam. When planted the ground should be well broken-up to the depth of 2 feet. The Alkanets are gross feeders, but are impatient of wet; they will bear partial shade, but are the better for having full exposure.—VERITAS.

OUR GARDEN FRIENDS AND FOES—No. 1.

SOME few weeks since I read with something like astonishment a letter signed "A MASTER GARDENER," in which he alluded to squirrels, hedgehogs, and bullfinches. I did not think that the writer could have been in earnest when he wrote the letter in question, and I also failed to perceive anything like a good joke in it. I think, however, that it would be well to endeavor to disabuse the public mind of some of the many prejudices which unfortunately exist against various birds and animals, as they very often form the excuse for the perpetration of great and unnecessary cruelties upon them. Your columns are without doubt one of the very best mediums through which to disseminate the necessary information, and I beg to contribute my mite, which may induce other readers who may be better qualified for the task to take the matter up, so that the truth as regards the habits, &c., of some of the many winged as well as four-footed frequenters of the garden may be correctly ascertained.

I will first speak of the bullfinch, and as regards him there does not appear to be the slightest doubt as regards his position. He must certainly come under the denomination of a garden enemy; indeed, I feel quite sure that your kind-hearted correspondent, the "WILTSHIRE RECTOR," would not have passed so sweeping a condemnation upon him had there been the least chance of finding extenuating circumstances in his case. Or had "A MASTER GARDENER'S" statement regarding him been correct, I for one should have been very sorry to have either shot or in any way molested him, as he is without doubt a fine handsome fellow. Unfortunately for him, however, instead of shunning the garden he is, I am quite inclined to think, more likely to be found there or in the orchard than in any other locality, and wherever you find him you will be sure to find him in mischief. I have frequently shot him in the very act of picking off buds from Apricot trees, Plums, Gooseberries, &c., and have found the buds in his mouth as well as in his crop.

I have more times than once subjected the tomtit to a similar examination, although this method, by-the-by, of ascertaining the guilt or innocence of an individual must be admitted to be objectionable, and something akin to what was in former times familiarly known on the border land as "feathered justice," or hang first and try afterwards. But in the poor little tomtit's case it was absolutely necessary that the punishment should precede the trial, and on the establishment of his innocence a free pardon was granted to the victim of an unjust suspicion. I am now quite inclined to exonerate him from anything like disbanding proclivities, although he is so frequently blamed and mercilessly destroyed by many on this account. I quite consider him as one of our best garden friends. He is frequently supposed to be in the act of injuring fruit trees, &c., when he is in reality benefiting them to a great extent by carefully freeing them from insects of various kinds. As an illustration of this, there is in the conservatory at the place where I now write a large Orange tree, which a week or two since was just coming into bloom, but the flower buds as well as the young shoots of the tree were very much infested with a small green aphid, so much so that it was resolved to fumigate the structure. But as some of the bloom was expected to be required for a wedding it was considered that even the slightest traces of tobacco smoke emanating from a bride's bouquet might not be considered appropriate, and on this account fumigation was delayed for a time. During the interval a pair of the common blue tomtits found access to the interior of the house, and in the course of two or three days they did not leave a single aphid upon the tree. The tomtit may without doubt be considered as strictly insectivorous. He delights in the small green caterpillars which wrap themselves up in the leaves of the Rose and other plants. He eats flies of all kinds, is by no means afraid of a wasp, and may even sometimes take undue liberties with bees. But

taking into consideration his many virtues we can well afford to be to his faults a little blind, and continue to regard him as a really true garden friend. There are, I think, three species or varieties of the tomit, all of which occasionally frequent gardens, and the foregoing remarks apply alike to all of them. The small blue variety is, however, the most common.

The common house sparrow is generally considered as a sad rogue. Among many other ill-done deeds attributed to him is that of picking the buds off fruit trees and Gooseberry bushes. I do not, however, believe that he does so. I have frequently seen him busy amongst them, and suspecting him to be really doing this I have there and then shot him, but the most careful *post mortem* examination has failed to discover the least trace of buds in either his mouth or his crop; and I am inclined to think that if he remove buds at all he only does so when they interfere with his search for insects, of which he is a very large consumer during the spring and early summer months. I have often seen him pull the blooms of Crocuses to pieces in a very provoking manner. Why he does so I am unable to say, unless it is in his search for insects. His decided weakness for Green Peas cannot be disputed. Taken altogether it may be truly said that sparrows do much good, and if their number is allowed to naturally increase they will be found to do much harm. I will allude to some other friends and foes on a future occasion.—P. G.

THE ROYAL NURSERIES, SLOUGH.

WHEN the Auriculas are in flower and specimen Roses are in bloom, and when stage and fancy Pelargoniums, Tulips, &c., are showing, it is a treat of no ordinary kind to inspect these celebrated nurseries. Roses are now receiving considerable attention at Slough, and how well they are grown there the high honours they receive at the London and provincial shows can testify. Mr. Turner grows his Roses in light airy structures. The glass is very nearly down as low as the floor line. Why should glass houses be built on walls standing 3 or 4 feet above the level of the ground, when upright sashes of glass and wood-work can be made at no more cost? It is certain that for the largest proportion of plants grown in pots, the more light that can be obtained above and around the plants the better. Then, again, the plants at Slough have plenty of room allowed them: no overcrowding is to be seen anywhere. In the houses where the largest specimens are there is no staking, the specimens as a rule being placed upon inverted flower pots, and the man in charge can gain easy access to any part of the plants without disturbing them in any way. The largest specimens are mostly well-known sorts which have been frequently mentioned. Very noteworthy, too, is a large house filled with Roses in pots 8, 10, and 12 inches in diameter, and for my part I would not grow them in larger pots. The health and vigour of the plants were excellent. Three new sorts sent out from this establishment in 1875, and raised here, have proved to be well adapted for pot culture. First must be placed Rev. J. B. M. Camm; not that it is a better Rose for exhibition than the others, but its flowers are the sweetest of all, and in other respects it is a fine and distinct Rose with globular rosy-pink flowers. Royal Standard had still larger and more globular flowers of a bright rose colour. Miss Hassard had no fully developed flowers, but in bud it is charming, and yields to no Rose in beauty of foliage and vigorous yet compact growth; the flowers are pale pink or flesh-coloured. Mr. Turner thinks very highly of Duchesse de Vallobrosa, it is one of the best of the new Roses of last year; and Princess Beatrice is another very good Rose raised at Waltham Cross.

We have heard on more than one occasion that the interest in the stage Pelargoniums has slackened, and that there is no demand for them. Mr. Turner does not say so, and on my asking what he did with such great numbers of them I was told that they never had enough to supply their customers. About a dozen varieties were coming into bloom in the show house. The plants were only medium-sized, but were in excellent health and throwing fine large trusses on stout elastic flower stalks. There is a surprising variety of colour in this class of Pelargoniums now. I noted Claribel as being very pure white with a carmine blotch on the upper petals; Prince Bismarck, crimson and maroon; Scottish Chieftain, crimson and upper petals dark maroon—a fine flower; and Ruth, lively cherry marked with maroon on the upper petals. But at the time of my visit the largest proportion of them was in bud only. A few of the very best sorts are Eclipse, Edith, Marchioness, Princes Donna, Revenge, Achievement, Admiration, Blue Boy, Conquest,

Constance, Crown Prince, Diplomatist, Example, Lord Clyde, Maid of Honour, Pompey, Prince Leopold, and Warrior.

Fancy Pelargoniums are very attractive, a large collection of choice varieties are still cultivated at Slough, and new sorts are being raised here annually. The fancies are well worth of extended culture. They are rather more tender than stage sorts; but if a lighter compost is used in pott ing, and the plants have a little more heat than their more robust cousins, they will not disappoint. Countess of Dudley, East Lynn, Fanny Gair, Godfrey Turner, Duchess of Edinburgh, Princess Teck, and Ellen Beck are amongst the best. The soil at Slough seems suitable to all sorts of plants, but skill and persistent attention cannot be wanting to produce such fine flowers as are at present to be seen.

Azaleas are largely grown, but Mr. Turner has discarded the large pyramids which he used to exhibit in London some years ago, and now grows a different style of plant. They are trained to single stems about the length of an umbrella handle, and the heads are something like an umbrella when expanded. Plants trained in this manner are very effective, especially when placed on the ground. Some plants have been allowed to grow in a natural manner, and it would be well if more were so grown. A collection of umbrellas is not more natural-looking than a collection of pyramids. A few of the very best varieties are Duc de Nassau and Duchesse de Nassau, which though old cannot yet be discarded from the choicest collection; Apollo, Comtesse de Beaufort, Flambeau, James Veitch, Madame Ambroise Verschaffel, Mdle. Marie Van Houtte, Mrs. Turner, Charmer, and Souvenir de Madame Rudolph Abel.

Of Auriculas the demand for plants is now so great that the stock of many fine sorts is well nigh exhausted. Some of the seedling alpinas are still in good trim, but the show varieties are mostly over. Tulips I hope to see when they are in flower, and shall probably have something to say about them at that time. With the increasing interest in other florist flowers it is certain that the gorgeous Tulip will not be forgotten, and the list of subscribers and exhibitors to the National Tulip Society is now a very large one. No garden should be without a bed of Tulipa, and yet I doubt if half a dozen collections could be found in the metropolitan district.—J. DOUGLAS.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

A GREAT change in the weather has occurred; the frosty east winds have gone, but the destruction caused by them still remains. Potatoes were utterly destroyed, even where protected from the force of the wind by a wall on the leeward side. Other plants which were not destroyed show the effects of the continued cold in a stunted growth, from which they will not soon recover. We have not yet been able to judge of the effects of the frost upon the fruit trees, but fancy those that were in full blossom will not be overburdened with fruit.

KITCHEN GARDEN.

We have continued using the hoe amongst all crops, including the permanent crops of herbs, &c., and all ground that is not under cropping is being rapidly filled. Peas have again been sown for succession. We find that during the dry and hot weather of July Peas are not only subject to mildew, but also to the attacks of turnips; we have therefore dug out shallow trenches in the same way as Celery trenches, and in the bottom of these the drills have been drawn for the Peas. No doubt that water can be applied to the crops much better when grown in this way, and evaporation from around the roots will not proceed so rapidly, especially if a little manure is placed over the surface of the ground. Cauliflower plants which were put out before the frost wind set in have grown but little, and a stray rabbit found its way in, and cut a number off at the surface of the ground. Fortunately there were plenty of spare plants to make the blank spaces good. It may seem a small matter to mention the mischief done by a rabbit, but these creatures are a real plague. At this season there are scores if not hundreds of young rabbits about, and they force their bodies through very small holes; for instance, the Carnation frames were raised off the ground about 2 inches to allow air to circulate underneath; one crept in there and ate off several choice sorts, so that it was necessary to surround the ground with galvanised netting. The meshes must not be more than 14 inch; if larger than this, small-sized rabbits get through.

We have made a sowing of Dwarf Kidney Beans in the open border, and have potted-off some that were raised in pots. It is little use sowing either Beans or Scarlet Runners very early, as they are sure to be cut down by frosts. These crops we hope, however, will now be safe. Those that we have potted-off now will supply pickings until pods can be gathered from the plants

out of doors. The kitchen gardener will do well to take stock of his work to see that all the salads and vegetables that he is likely to need are either sown or planted and making satisfactory progress. "A KITCHEN GARDENER" gave some appropriate hints last week, and especially that referring to the Carrot maggot. We have not tried soot and lime, but this can easily be done previous to sowing. We intend to try watering the crop with water qualified with a glass of paraffin to a gallon or so of water, as we have frequently been recommended to do.

VINEYERS.

In the earliest house the Black Hamburgs are colouring rapidly, and the attention required now is very small. The principal work is attending to the ventilation and damping the paths about twice daily. We have frequently stated that a dry atmosphere, or even dryness in the soil of which the border is composed, is not likely to be beneficial to the Grapes; in fact, we are persuaded that the fruit does not colour well under such circumstances. I think it was stated in this Journal that Mr. Meredith, who exhibited such finely coloured Grapes in June and July, constantly kept the surface of his borders in a moist state, and used to allege that this was the secret of his great success as an exhibitor. There were not wanting those who insinuated that the Grapes were sour; our own experience with the Black Hamburg is that sometimes the fruit is coloured before it is ripe, but we have always found that the blackest Grapes in the house were the richest flavoured and had the firmest flesh. The common house spider is a troublesome interloper in the viney at this time; small specimens get into the centre of the bunches and spin their webs all over the outer berries. The only way to reach them is to thrust a pencil carefully into the bunch where the spider is lurking, when it will let itself down from the bunch in considerable alarm, and may easily be captured.

As the fruit is cleared off Vines in pots the canes may be destroyed. It does not pay to grow them on for future cropping when young Vines may be raised so easily from eyes and can be grown to a fruiting size in one season. Vines that are being grown-on for fruiting next year must not receive any check to their growth. When the pots are thoroughly filled with roots shift-on into the fruiting pots without any delay; 12 or 13-inch pots are sufficiently large. We give abundant supplies of tepid water to the roots, but not any manure water. The potting material is good loamy loam, and the top spit of an old pasture is the best. We have used it almost fresh cut, but prefer to let it lie about three months stacked up on a heap with the grass side under. To this loam we add a fifth part of decayed stable manure and a few crushed bones. We drain the pots well, and place over the drainage some of the fibrous part of the loam from which the finer particles have been shaken; and in potting the compost is beaten in firmly with a wooden rammer, and the more fibrous the loam is so much the more firmly must it be rammed in. Many persons grow their pot Vines in bottom heat; others condemn the practice, as giving a gross or succulent class of roots, which suffer during the winter season. We have always grown our Vines on a staging fixed over the hot-water pipes, and their growth has been surprising, the canes always being of the strongest description, and this system we can confidently recommend. The treatment may be summed-up thus: Water freely at the roots with water rather warmer than the temperature of the house, and syringe twice a day with the same. Close the house early in the afternoon, but admit air early in the morning and rather freely by day in hot weather. The minimum temperature ought not to fall below 65°, it may be 70° during warm nights. This treatment to be continued until the wood shows signs of ripening, when more air and less moisture should be provided, but the transition must be gradual.

GREENHOUSE AND CONSERVATORY.

Stage and Fancy Pelargoniums are well advanced towards the flowering stage. We have been careful to fumigate all through the winter on the first appearance of green fly, and at present there is no trace of any in the house. Although we fail to see them they may be present, and it will be better to fumigate at once before any of the flowers open. The pots have a watering of manure water about twice a week. Tree Carnations are in flower; in fact we are never without these enjoyable flowers. The young plants have been potted off and placed in a cold frame, where they will remain until they are established in their blooming pots, when they do better in the open air. As the growths progress it is necessary to tie them to their supports. Green fly if not destroyed does much damage to Tree Carnations. Nothing answers better than to fumigate the plants well when in the frames; and if they are free from fly when placed out of doors it is not likely to hurt them much before they are removed into the autumn.

A novel feature in the greenhouse are the hardy *Cypripediums*, at the head of which must be placed *C. spectabile*. Some pots of it in the shady corner of the house are throwing up many strong spikes, but the flowers will not open until June. The first to open is *C. pubescens*: this species has one and two

flowers on a stalk which are just passing away, and *C. Calceolus* is opening. This variety is dark purple with a clear yellow lip. Another very interesting Orchid for greenhouse culture is *Orobis foliosa*; it does very well in the greenhouse and freely increases. It is best to place the plants in a corner where they can be syringed once or twice a day. We have tried the beautiful *Disa grandiflora* under the same treatment, but have failed; and yet it is grown at Chatsworth in a Heath house, where we saw it growing so freely as the *Cypripediums* do at Loxford. It is now a good time to sow Chinese Primula, Cinerarias, and Calceolus. The seeds should be sown in pots in fine soil, and be covered over but lightly. The seeds vegetate best with the aid of a little heat, and the pots should be placed in a frame. When the seedlings are large enough to handle we prick them out into large 60-pots, about a dozen in a pot, and when the plants have made two or three leaves as large as a fourpenny piece they are potted singly into thumb-pots. We sowed *Cyclamen* about a month ago, and the small plants are about ready to be potted-off singly in small pots. We intend growing them on in a little heat all the summer, and shall obtain a few flowers from each in January and February next year.—J. DOUGLAS.

TO CORRESPONDENTS.

* * * All correspondences should be directed either to "The Editors" or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

BOOKS (F. G. F.)—Our "Garden Manual" will suit you, price 1s. 6d., or free by post, 1s. 8d.

ROSES FROM CUTTINGS (S. J. W.)—You omit to state the season of the year at which you inserted the Rose cuttings. Oblige by supplying the delicacy, and your letter shall have our attention.

RED SPIDER (Major M.)—We never communicate the addresses of correspondents. A letter sent open to our office would be forwarded.

INSTRUMENTS FOR DRESSING FLOWERS (R. J. S. H.)—We do not know where the proper instruments for dressing flowers are to be obtained; I have never seen any offered for sale, and I have no doubt that some of the eminent florists perhaps you will be able to get the information from them.

PLANTING A FLOWER BORDER (Friele.)—We do not consider the yellow and scarlet objectionable, especially as the *Iris* comes next to the *Calceolus*. We should like the arrangement better if the variegated *Geranium* could be placed between the *Iris* and *Lobelia*.

FLOOR FOR FERREY (Twenty-years Subscriber.)—In making a ferrey over the boiler cellar we should notify the plan you name of turning an arch over the cellar in preference to increasing pillars and covering with iron girders without an arch. Sooner or later the pointing in the latter case would give way, and you might have some trouble with the dust, if not something worse, arising from the boiler shed. With so arch you would be perfectly safe, and your foundation would be the more substantial.

FLOWER-GARDEN ARRANGEMENTS (J. P., Jun.)—We cannot submit modes of planting, but can only criticise and suggest alterations when a proposed arrangement is submitted to us. Were we to propose a plan of planting your beds we might advise the use of plants which you do not possess, and not utilize those of which you may have a large supply. Your beds are sufficiently large to have a trench 4 or 5 feet in diameter of say scarlet *Geranium* round the Rose filling in the remaining spaces according to taste and the plants at your disposal.

GOLD FISH IN GARDEN POND (F. J.)—A correspondent states that their management is very easy—"so easy, indeed, that nothing more is necessary than to prevent the pond from raining dry in summer and from being continuously frozen over in winter. I have two ponds on the highest level of one of the southern counties, in which there are hundreds of gold fish. These ponds are not large; the smallest is certainly not more than 25 feet by 16 feet, and is not deep. About eight years ago seven or eight fish were put in it, and they have increased wonderfully. The sides and bottom are stiff clay, and in this the gold fish delight. The pond will not do nearly so well in a fountain; they will live and increase if it is of good depth, but not as they do in a pond. They are easily tamed—that is, they will come to the edge of the pond on the top of the water when they hear voices if they are occasionally fed with a few pieces of bread, over which there is rare scrambling. I can remember gold fish in the larger pond for more than thirty years."

REPORTING AZALEAS (An Amateur.)—Report at once those that have not flowered, and the others that are in the flowers have faded. Only give a moderate shift and keep the soil firm to support, keeping the neck or collar of the plants rather high in the centre of the pots. Place the plants in heat, even those that appear to have made their growth, sprinkling overhead twice daily, maintaining moist atmosphere, and shading from sun. They should be continued in heat until the growth is completed or to the end of June or early July, and then have a cooler house with plenty of air and light, so as to thoroughly ripen the wood for securing well-set buds.

MEYENIA RECTA (R. C. D.)—Withhold water, but not to the extent of causing the leaves to be entirely shed, keeping rather cool and comparatively dry for about six weeks, and then water rather freely, rising from sea. The ripe wood for future breaks, and return to heat, but not to hot, reporting when the new growths are an inch or two long. The plant will flower again in late summer, and should be kept rather dry over the winter.

REN-SKINNED FLORENCE POTATO (First Award).—Our experience of this kind coincides with yours, but we are bound to admit that in some soils, especially light, its quality as a late kind is good.

LARGE CERISE SMALL SEED (Idem).—The largest and plumpseed seed is stronger in vegetative power, and usually affords the healthier plants, than small seed.

PLANTING-OUT ORANGES AND CAMELLIAS (Citron).—Unless you are prepared to make a proper border for the plants we should not advise their being planted-out, though both would succeed admirably were the soil taken out 2 feet 9 inches deep, and 9 inches of rubble put upon the bottom for drainage, the beds or borders having a drain with proper outlet to carry off superfluous water. We should use pore loam, the top 2 or 3 inches of a pasture with its turf for the Orange, preferring light to heavy soil, and if poor add a fourth part of fresh horse droppings, chopping the loam up rather small. For the Camellia employ fresh loam with its turf about 1½ inch thick, and to this add a third part of sandy peat. The soil in both cases should be raised 9 inches higher than the intended level to allow for settling, and be employed moderately firm, making it rather firm.

CARNATIONS INJURED BY SEWES (L. L.).—First carefully examine your plants and pick out any single that may be lurking amongst them; then stir the ground well, and sprinkle over it and around the stems a mixture of soil, lime, and guano. If you lay Cabbage leaves near the plants they will probably attract many of the slugs, when you can then easily destroy them. Be very general in this remedy, and wherever the surface of the ground is seldom disturbed than when it is moved frequently.

DOUBLE STOKES (J. S., Sutton).—Perfectly double flowers cannot produce seed either in England or Germany. The seed is saved from single flowers. Flowers having more than four petals are said to produce seed which gives the greatest per-centage of double flowers.

HOY GROOT PLANT (A. H.).—The botanical name of this plant is *Peristrophe Inulastris*. It is an Umbelliferae plant, a native of Panama, and is known there by the appellation of *El Spirito Santo*. In England its popular name is the Dove Flower, from the column of its flower bearing a striking resemblance to a dove. It requires to be grown in a compost of fibrous loam, leaf soil, and turfy peat in equal proportions, mixing therewith broken charcoal dust, and also a little sand, and a few small drains. Place it in a stove and water very carefully until growth commences, afterwards more copiously. Your other question will be answered next week.

NAMES OF PLANTS (Hollon).—*Amelanchier Botrypanium*. (*W. Parry*).—*Achillea umbellata*. (*F. T.*).—1, *Stachys lanata*; 2, *Davana latifolia*; 3, *Euphorbia Peplus*. (*T. P.*).—1, *Lamium album*; 2, *Lamium purpuratum*; 3, *Stellaria Holcetes*.

POULTRY, BEE, AND PIGEON CHRONICLE.

THE LONDON POULTRY SHOWS.

The caterers for poultry fanciers seem to imagine that in the neighbourhood of London the old proverb that "enough is as good as a feast" does not hold good, for they have arranged to hold exhibitions at the Aquarium, Agricultural Hall, Alexandra Palace, and the Crystal Palace. Whether all are to be under the same management as they have been heretofore we do not know, but we confess we regret that, as there are fifty-two weeks in the year, all these four meetings have been arranged to be held within the short space of seven of them. The dates do not clash, and that is all that can be said; and it would be no bad plan for any distant exhibitor who has a good stud of birds to pitch his tent in the metropolis for a little while, and make a tour with his birds from show to show instead of incurring the expense of sending them home. As all shows, however, are got up with the intention of making them a success and not a losing transaction, we should imagine that the promoters of these exhibitions would do wisely to consult together and see whether some one or even two of them cannot be postponed for a more advantageous date.

Taking briefly into consideration the ages and specialities of the four exhibitions, we should undoubtedly say that the two Palace shows are those which deserve most patronage and should be the least allowed to suffer. Of the Sydenham meeting, however, we have no fear. We believe many people will look upon their poultry merely as a healthy recreation and pleasure would prefer a high commendation at the Crystal Palace to a prize at another show. It is now an old-established meeting, and for some years has been held about the same date, and is undoubtedly the great meeting of the year. For the other three shows, then, Sydenham must not suffer; nor will it, we feel certain. The next in order of size comes the Alexandra Palace, which on the last occasion was for chickens of the year, and a capital show it was, admirably conducted and prompt in its arrangements. This show is announced to be held on October 16th, 17th, and 18th, and will, we hope, once more be for chickens of the year as different to the sister Palace, where classes are for birds of all ages. For the welfare of itself and that of the annual show it is the university city we should have been glad to see the later week earlier in the month. For Oxford, however, we have no fear. Well managed, well patronised, very popular as this show has been, so will it be doubtless on this occasion; for it would indeed be shabby of any loyal fancier to abandon a love which has been so long constant and true for one, comparatively speaking, of mushroom growth.

The other two yet to mention are the Aquarium at Westminster and the Agricultural Hall at Islington. It has been proposed

that the latter should give way, as being the younger, but this we cannot see, for surely, though both are infants, the Dairy Show was held some months before the Aquarium meeting. We could spare them both, and if the one was postponed to December and the other to January we believe it would be better for both. We cannot think either could have been a great success last time; in fact, we know the Westminster meeting was attended with much loss of money. We should suppose that the managers will be responsible for all claims, and so after all it is for them to see what can be best done. We were, however, rather surprised to hear that a sum of money is being collected to partially, or as far as possible, recoup the Aquarium losses. We say surprised, because we understood the show was quite a private undertaking, and had the balance been to the good instead of to the bad we doubt if we should have heard much about it. Both the two last-named shows have yet to learn many things about their proper management, for we know of a most peculiar mistake which took place at the Agricultural Hall over a lady's Buff Cochins, while at the Aquarium the blunders and confusion were so many that it would be impossible to tell of them. The managers, however, were pushed by the narrow limit of time afforded for their preparations, and we hope if they again hold their meeting that they will see to this point, so that things may be in better train when the visitors arrive. From this meeting the others may learn a good lesson. We allude to publishing the names of the judges who are to award the prizes in the various classes; and though from the death of one of their number they were unable to adhere to their list, it was a good plan and a system we hope will become generally prevalent.

Whether all the four shows are held on the dates named or not, we hope that those who do keep their engagements as they are now advertised will, in drawing up their schedules, bear in mind that the entry fees are often in many classes wholly disproportionate to the prize money given; that double baskets generally produce double entries—a privilege all shows should grant; that the names of the judges and their classes should always be given; that the awards should be placed on the pens as soon as the judges have handed in their slips; and that many amateurs clever in their own breeds would assist in judging, and would be able to give time and knowledge to many classes which have hitherto been but indifferently judged.

Thus much for the metropolitan shows. We personally wish them all much success, and trust we may be present at the meetings to judge for ourselves. We have mentioned the subject to-day as it has caused, and is causing, much talk among fanciers, who when they come up from far-distant homes to see a London show want and expect to see an exhibition worthy of England's capital, and not a show-room indifferently filled because of the dates of the various meetings so closely clashing.

—W.

WHARFEDALE POULTRY, &c., SHOW.

The seventy-ninth Show of the Wharfedale Society was held at Otley on the 12th inst. The entries were very good in all sections, and the pens were arranged in the open air. The day being fine and not cold the birds so exposed took no harm; but it is rather singular that while a large marquee was provided for the dogs, valuable birds should have been placed at the mercy of spring weather.

Game headed the list, but the entries in this section were not so numerous as we have seen them here, the cup going to a handsome well-shown pen of Brown Reds. *Spanish* were very good; the Epworth cup pen again attaining similar honours. In *Cochins* the winners were all Buffs. In *Dark Brahmas* we had the impression that a mistake had been made in the two first pens, but on close examination we found little difference in the quality of each; the third was also a capital pen. *Polish* were very good; Silvers first and third, and Gold second. *Hamburgs* as a rule were very even classes and the entries good, some of the pens being as near perfection as is ever seen; the cup going to a grand pen of Gold-pencils. *Bantams* were not very good as a lot; but there were some very good pens of Black and Brown Reds, the two winning pens a close run for cup. Blacks good in style and plumage, but poor in comb. In *Bantams*, variety, first were Gold and second Silver Sebrights, and third Whites. *Of Ducks* the Variety class was the best and most interesting.

Pigeons were, as is usual here, a capital entry. In *Pouters* the first was a Red. *Carrier* good; the first and second Duns, and third Black, and correctly placed. In *Barbs* the winners were all Blacks; the first good, but second and third rather good. In *Jacobins* the winners were all Reds. The third was by far the best, being very close in hood and chain and correctly marked; the second was rightly placed; and the first was coarse, loose in feather, and Baldpate-cut under the beak. We should have placed the White third. *Dragoons* were not a grand lot; the first was a Grizzle, a grand bird, rather heavy in wattle; the second and third Blues were quite different in style of head, being flat square-headed birds. In *Short-faced Tumblers* the

wet cast of plaster, against which the bar or frame was so placed that the wax sheet produced, while it freely left the plaster, adhered most firmly to the dry wood, and was in the exact position it required as the midrib of the comb to be formed upon it, and was in addition enclosed with the rhomboidal forms which constitute the bases of bees' cells, since the cast was itself taken from a German engraved plate. Using these guides I soon found that the rhomboids just referred to hardly seemed to the mind of the bees, and measurement revealed the fact that the German plates gave the cell bases of too small a size, making fifteen and a half cells to the 3 inches, while the comb from a considerable number of hives gave a mean of fourteen and two-thirds cells in the same space, from which mean none of the examples differed materially. In order to accomplish the double object of giving bees cells of the exact magnitude and sheets made in the manner already explained which should fill or nearly fill their frames, I commenced attempting to prepare casts from natural comb, and succeeded by means sometimes explained in a contemporary and also in my "Practical Bee-keeping," but which space forbids me now to more than outline.

Having selected old and tough comb, all worker, and as flat as I could find it, I cut down the comb walls on one side till the work commenced to get ragged, when I poured melted tallow into the truncated cells, and then cut again until the cell wall had been almost wholly removed. The tallow held the pupa skins against the knife, and the work progressed most neatly. Removing the tallow and flattening the comb, and subsequently taking a cast in plaster, I got a matrix for my sheets which enabled me to obtain results I may now detail. Placing a frame containing one of these sheets in the middle of a stock I found in twenty hours that the comb was completed and the middle part was filled with eggs. The cast was not prepared until the time for profitable swarming last year had passed; but in the latter part of June I obtained a swarm by purchase and placed it in a Cheshire hive, every frame of which contained these sheets to the depth of 64 inches. In three days the hive was nearly filled with comb, while at the evening of the twenty-third day after hiving brood was hatching from the bottom edge of more combs than one, and the bees at once accepted a super which was placed over them. The combs were all absolutely flat, and the hive did not contain I believe ten drone cells. A great point had now been gained, for every bee-keeper of experience knows the vexatious difficulty of getting rid of excess of drone comb. In the height of the honey season it is all but impossible to get bees in stocks to build cells of worker size. Cut out drone combs you may, but in nineteen cases out of twenty you will only have them replaced.

Meanwhile the Americans had been busy, and by the kindness of my friend Mr. Hunter I received a supply of the renowned Long's foundations, the beautiful finish of which is well nigh perfect. The 2-foot rule at once showed the cells to be too large for raising workers, since thirteen and a half only are given to the 3 inches. The size is, in fact, as nearly as may be half way between worker and drone, twelve cells of which give the same total diameter. A little calculation rendered apparent the immense disadvantage this excessive largeness of the cells would be to the bees during wintering, but I placed at once an experimental sheet in the midst of a strong colony. The bees, although fed, commenced working upon it tardily, whilst the next hive seemed to take my sheets made from natural comb with hearty goodwill, finishing three while the Long's foundation was only about half complete. Eggs were slowly laid in it, and now more than half the bees produced are drones. Nor is this the only disadvantage; the sheet gives much trouble by a disposition to plait at the lower edge. Since my sheets, if put into the hive bent and crooked, are made perfectly flat by the mere weight of the adherent bees, why are impressed sheets crooked and warped under the same influence? I can only at present speculate upon this point, but I believe the following is the reason. All substances, unless absolutely non-elastic, when bent under pressure are put under a certain amount of molecular strain, which operates in tending to restore straightness to them when softened. If a sheet of wax be bent it will be found, especially when warmed, to tend towards its original form. The impressed sheet is stretched and bent backwards and forwards when the form of the cell bases is given to it. It is fixed at the top to the bar in the hive, and the warmth of the bees whilst elaborating the comb allows the sheet to reduce the bending it has received, and so to become longer than the part of it attached above. It can only dispose of this greater length by assuming a waved form from end to end. My sheets, on the contrary, are made in the form they are subsequently to assume, and consequently no disposition to elongate exists.

But the most serious charge brought against foundations is that they are commenced at the bottom and break away. In reply to this I can only say mine are always commenced at the top, and that I had the opportunity of the Alexandra Palace last autumn of showing to many prominent bee-keepers a large number of combs commenced only, but with the top row of cells all well advanced.

This is so uniformly the case that I have been much puzzled as to the cause. I have tried a number of experiments which have to a large extent, if not wholly, made this point clear, while they have brought out some very curious facts with regard to the construction of comb itself. These experiments show conclusively, I think, that the form hitherto given to comb foundations both by Germans and Americans is not that which most helps the bees, nor is it that to which a study of comb structure would have led. Upon this matter, together with my drone comb foundations for supers, I hope in the future to dilate, merely now contenting myself by saying that the only super I have had as yet started has its row of cells contiguous to the bar nearly finished, while the rest of the cells are all but untouched. As I disposed of the hive working it I retain it as a specimen, and shall be pleased to show it with many others, and any of my hives with their combs formed upon the sheets I have been describing, on Saturdays May 12th or 19th to any brother bee-keeper who may be interested in the advance of apiculture. —F. SWENHUR, Avenue House, Acton.

SECTIONAL SUPERS.

The importance of this subject to the bee-keeper will doubtless excuse my returning to it, for the experience of the various honey shows of the last three years has proved that the days of large heavy supers are doomed, the first object of the bee-master who hopes to make profit of his hives being to raise a product that will command the best market price, which the large bell-glass or wooden box of honey does not. Neither does the strained honey satisfy the fastidious taste of the wealthy epicure. American bee-farmers are years ahead of us in the discovery of what is needed for the desirable end. Their super patterns are legion, but all tend to the same object—to produce clean well-filled combs of attractive appearance, and small enough for the retailer to sell without cutting.

Mr. Root of Medina, Ohio, whose apiary was figured in this

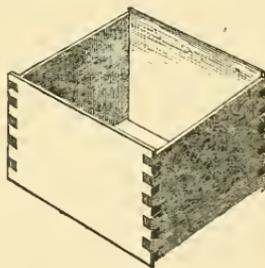


Fig. 48.

Journal a few weeks back, has favoured me with samples of his latest sectional supers, which in simplicity and inexpensiveness will be hard to beat. Fig. 48 illustrates the section box, and

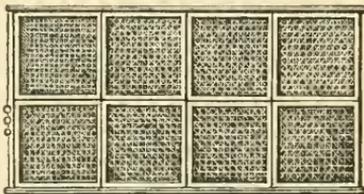


Fig. 49.

fig. 49 the manner in which they are placed in the frames with which the hive is filled. I should, however, say that both hive and super are exactly alike; the former, filled with ordinary frames, being used as a breeding box; the latter, filled with wider frames and sectional boxes, as snper. When applied to the bees each section is fitted with a piece of clean comb, natural or artificial, without which, of course, no dependence could be placed that the bees would build in order. On examination of fig. 48 it will be seen that all four sides are neatly morticed, and they are merely held together by the mortices; but being all cut by circular saw to gauge, such is the accuracy that the whole is quite firm and every piece interchangeable. The top is grooved to fix the guide comb, and the section boxes are sold

WEEKLY CALENDAR.

Day of Month Week.		MAT 24—30, 1877.		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.		Day of Year.	
Day.	Temp.	Day.	Temp.	Day.	Night.	Mean.	h.	m.	h.	m.	h.	m.	h.	m.	Days.	m.	s.	h.	m.	s.
24	Tu	Reading and Colechester Shows.	87.4	43.9	58.3	55.9	3	59	7	55	5	31	3	9	11	3	24	144		
25	F	Tewinham Show.	65.4	42.9	54.2	57	7	55	6	45	2	25	12	3	18	13	145			
26	S	Manchester Show closes.	67.4	42.8	55.1	56	7	58	8	5	3	46	18	3	12	146				
27	SUN	TRINITY SUNDAY.	66.5	44.7	55.6	57	5	59	9	18	3	15	14	3	6	147				
28	M	Royal Geographical Society (Anniversary) at 1 P.M.	68.1	44.4	56.2	57.4	8	0	10	18	3	56	15	2	39	148				
29	Tu		67.5	44.1	55.8	57	8	1	11	8	4	49	16	2	51	149				
30	W	Society of Arts at 8 P.M.	68.4	44.7	56.6	57.52	8	3	11	34	5	54	17	2	43	150				

From observations taken near London during forty-three years, the average day temperature of the week is 67.2°; and its night temperature 58.1°.

THINNING FRUIT.



DURING the latter part of May and the early part of June more fruit requires thinning than at any other season of the year. The enormous number of Vines in unforced houses throughout the country form their fruit at the period named; and Peaches and other stone fruits in cool houses and in the open air also require attention now. Before giving a few hints on fruit-thinning I may just say that I am of opinion that, as a rule, many kinds of fruit are not thinned to the extent it is necessary they should be, and if thinning the fruit were more judiciously attended to, in the place of a glut of fruit one year and none whatever the next, there would be a more uniform crop annually.

GRAPES.—Some varieties of Grapes set their berries much thicker than others. The highest-flavoured Muscats frequently set very irregularly; in many cases there being nothing but a few large berries to each bunch; while such sorts as the Alicante form ten times more berries than are wanted. Muscats should never be thinned until about three weeks after the bunches have gone out of bloom: by that time it will be perfectly visible which berries are likely to swell to their fullest extent. Let every one of these remain, if required, and clip out all the small berries. Where there are not enough of large berries to complete the bunch a few of the largest of the small berries may sometimes be left; but for my own part I would sooner see a thin bunch than a thick one with a multitude of miniature berries amongst a few large ones when ripe. Lady Downe's is not altogether free from the Muscat fault; its fruit does not always swell equally. This, I have observed, occurs oftener in partially shaded houses than in those fully exposed to sunshine; but there can never be any mistake in cutting out all sickly-looking berries, and leave only those which show a fresh plump appearance. Alicantes may be thinned a few days after they have gone out of bloom without fear of making a mistake; but Barbarossas require more care, as they are not uniform setters. The Black Hamburg generally sets freely, but it is worth while observing that its berries, as a rule, form in threes, the larger one being in the centre, and in well-set bunches there are enough left when these two are cut away and the large centre berries are left all over the bunch. No other Grape that I know calls for particular remark.

Always use a pair of long, narrow, very sharp scissors in thinning. Clip the berries out of the centre before removing them too much from the outside. In inserting the point of the scissors in the centre of the bunch take great care and do not pierce any of the berries that are to be left, or those so injured—even very slightly—will fail to do properly afterwards. In thinning, the bunch must be held without being injured. There must be no twisting of the shoulders nor rubbing of the Grapes. Nearly all the berries which have to be taken out should be removed the first time, but if it is seen they will become

too close a few more may be cut out before they are fully swelled. Always leave every bunch a little too thin rather than a great deal too thick, but try and remember how they ended last year and act accordingly.

PEACHES AND NECTARINES.—"Leave the fruit of these from 9 to 12 inches apart all over the tree," is advice often given, but it as often happens that Peaches and Nectarines set thickly in one place or part of the tree, while other parts are bare of fruit. In this case it is difficult to get them "all over." "Then should they be left closer than 9 inches apart to recompense for the deficiency on many of the branches?" Certainly. I have a tree now with plenty of fruit at the points of the branches, but scarcely any in the centre, and on some branches I have left the fruit not more than 4 inches apart, and I have done this before and found it to answer well; but at the same time the crop is not excessive. Perhaps if all the fruit were distributed evenly over the tree they would not come closer than 9 inches apart. I merely refer to this because I have known some amateurs who did not understand whether when the fruit was thick in one part and none in another it should still be thinned to the state I distance.

It is never safe to begin thinning these fruits to any great extent until after the stones are formed. When they are set very thickly those which appear in clusters may be reduced to one, but nothing further than this should be done until the time above stated. Those which stone first swell quickly, and they often take the lead of those of which the stoning is doubtful. When these early-stoned fruits are sufficient to form a crop remove the others at once, and the strength of the tree will be not wasted, as would otherwise be the case. The fruit which is left should always stand prominent on the face of the trees, and those which are formed behind the branches should only be left when they are actually needed. On strong healthy trees the fruit may be left from 6 to 10 inches asunder; on weak trees it should be double this distance.

APRICOTS.—These are thinned under the same regulations as the preceding, only green Apricots are often wanted for cooking and preserving in that state, and the best time to gather them for such purpose is just before the stone in their centre becomes hard. Apricots often set in clusters, and these should always be reduced before the single fruits are touched. They should never be left closer than Peaches. This season our trees have just set about enough for a crop, and we shall not thin-off a single fruit.

APPLES, PEARS, AND PLUMS.—It is very seldom that the fruit of any of these are thinned, and so much the worse for the trees, especially if young, as many fine young trees that would ultimately be of a superior character are crippled, if not ruined, in their early years by being allowed to bear heavy crops of fruit. It is a leading desire with many to see the branches of little trees bent under a load of fruit, but it is bad practice. Single fruit may generally be left without doing harm; but to give the fruit a fair chance of coming to perfection and the

tree an opportunity of prolonging a fruitful existence nearly every cluster should be reduced to one fruit.—M.

FLORIST FLOWERS RAISED FROM SEED.

AURICULAS.—From April onward no outdoor flower can at all compare with the Auricula, and any garden without it is devoid of one of the very choicest of spring flowers, for they are lovely upon the plants and very useful for cutting. I allude to the Alpines, for no one need expect anything good, even for borders, out of a packet of seed of the show varieties, at least such is my experience; and even in Alpines not many come from seed of exhibition quality. Nevertheless, very useful kinds in variety may be had for borders from a packet of seed, and such as are deserving of being cherished in any garden. Everybody may grow them, for they are not at all delicate, but will thrive anywhere providing the soil be free from stagnant water. They are grateful, no plants more so, for a little well-decayed manure or leaf soil mixed with the soil; and if planted where they have slight shade in hot weather they thrive all the better.

The seed may be sown any time from March to May, or even June. I sow in April, drawing a pan (one a foot across is large enough for a packet of seed) an inch deep, covering with about half an inch of the rough of the compost—three parts yellow loam and one part leaf soil, with about a sixth of silver sand, filling to within an eighth of the rim with sifted compost, making the surface smooth and scattering the seed evenly, and covering with fine soil about the sixteenth of an inch deep, placing in a frame with a gentle heat, shading from sun to lessen the necessity for frequent watering in order to keep the soil moist, which it must be from the first. The pan may be placed in a cold frame, but I think there is a more regular germination of the seed in gentle heat than in a cold frame. In either case shade is given, and when placed in a hotbed so soon as the seedlings appear they are moved to a cold frame and light and air given. The latter they delight in, and the former also, but subdued—the fierce rays being broken by shade. No place is better after June than a north border, but until then shade artificially, as what we want is growth early and continued so as to have the plants well established before winter.

In June or July the seedlings will be fit to prick off 6 inches apart every way, lifting carefully and making the soil firm about the plants, watering gently, shading them from sun. Though they like shade in summer they want sun in autumn onward, and this must be remembered when choosing the site for growing them. If the soil be wet a raised bed should be formed, putting in some stones for drainage, and not less than 6 inches thickness of soil upon it. It is well if the plants in the bed are so arranged that they may be covered with a frame in winter, placing it over them in October, with a brick under each corner, giving air abundantly by the lights in all mild weather, closing only during frost, in which case the bricks should be removed from the corners of the frames, and in very severe weather protection over the lights should be afforded. The value of the lights is in protecting from rains, wet being injurious; and protection is absolutely necessary in spring if nearly leaves be wanted, and the flowers are required to be kept from discoloration. But for Auricula-growing for the million all that is wanted is protection from heavy rains in autumn, winter, and spring. Oiled calico lights answer well, they being fixed so as to throw the water clear of the outer row of plants. The lights should be withdrawn in mild weather.

I have, however, seen some really gorgeous beds of Auriculas which have not received any attention beyond shading until the plants were established, and shielding them from rain and sun when flowering. Some people have an idea that Auriculas are miffy plants, and that it is no use attempting their culture unless more than ordinary care can be bestowed upon them. Yet the Alpines are very suitable border flowers, and a garden without them is deficient of one of its finest spring ornaments. What finer plants have we than a few of the choicer show and Alpines grown in pots drafted from the frames (in which they have been wintered) to the greenhouse for flowering? Their association with *Primula cortusoides amena* var., and others, is very effective. After flowering, a frame on a north border until October will be found not only to suit Auriculas but a majority of *Primulas*, which are really worth growing in pots for the decoration of the greenhouse in spring.

If able to obtain some choice seed of show Auriculas, then we must be prepared to give extra attention to raising and growing the plants. A compost of maiden loam at least a year

old, and a third of cow dung two years old, or a similar portion of well-reduced leaf soil, is suitable. The seeds are best sown in rows about an inch apart, placing in a cold frame, keeping regularly moist till the seedlings appear, after which no water to be given except between the rows, not wetting the foliage of the plants. When the plants have about four leaves lift them carefully and place them round the sides of 5 or 6-inch pots. Water can thus be given in the centre of the pot without wetting the foliage, besides which the plants thrive better than when placed all over the soil. At the beginning of August they will be large enough to pot-off singly into 3-inch pots, returning them to the frame, keeping rather close and shaded until they have taken well hold of the soil, after which give plenty of air, continuing the shade, however, until the close of September. During winter very little water will be required; but about February it will be necessary to apply it if the weather is mild, increasing the supply with the growth. The plants may be moved to a north border in summer, repotting them into 4½ or 5-inch pots in August, merely rubbing off the surface and outer soil, using the same compost as previously advised. The following April most of the plants will flower. A little weak liquid manure may be given about once a week in February, and after that twice a week until the truss is seen rising in the foliage. The choicer description of Alpines may be treated in the same way.—G. ABBEY.

SEAKALE.

AFTER reading the brief but lucid description given by your correspondent "J. P. M." (page 344), on how to grow Seakale in large quantities, it occurred to me that I might tender a few remarks which may be useful to growers with limited means. I will first refer to my mode of blanching. The plants are 2 feet apart, in rows 3 feet asunder. In the autumn as soon as the foliage is ripe I clear it away, and then select about one-third of the best of the stools in the plot, and cover them in either of the following ways:—If the plants are large I take sticks 2 or 2½ feet long (the staves of old cement barrels split into pieces answer well for this purpose), these I place all round the plants slantingly so that they meet close together at the top, and cover to the depth of 6 or 7 inches with Seagrass (a material the Kale delights in), but smaller plants I cover with an inverted 9 or 10-inch flower-pot, again covering with grass but less thickly than the sticks except on the top of the pots. If Sea-grass is not procurable, then stable litter or straw may be used for covering. The Kale is ready for cutting about the last week of February or the first week in March. My second lot I cover in January, and my third towards the end of February, immediately before it commences growing. The result of this simple practice is, that I have superior heads of Seakale for above two months.

The plants occupy the same bed for many years, but occasionally a bed requires renovating. The plants are then dug-up, and clean white roots are selected not less than half an inch thick, and cut into lengths of about 4 inches. These are inserted in sand at the distances above mentioned, the ground being previously trenched and well manured. In the month of May last year I planted a bed in the manner described, and I have seldom or never seen finer Seakale than I have had from that bed this season. Earthing-up, covering with coal ashes or cocoa-nut refuse must, I think, injure more or less the delicate heads as they grow-up through such covering, and great trouble must be involved in washing the Kale, for I think it cannot be easy to remove the gritty particles in the axils of the leaves.—B. G., *Co. Down*.

GIVING AIR—SPRINKLING.

VERY deeply rooted is the idea that the scalding of fruits and the scorching of foliage are caused by the too powerful action of the sun's rays whilst the fruit or foliage is wet. This, in my opinion, is altogether an erroneous idea, as is proved in many places every day during the spring and early summer months. We shut up Melons, young Vines, Cucumbers, &c., with a shade temperature of 90° or 95° (representing a sun temperature of 120° to 140°), and syringe unsparsingly at the same time with water at 100° or 110° during the brightest sunshine, but they do not scorch. Grapes, too, and Peaches three parts grown, which we wish to force to the utmost, are closed at a temperature only a few degrees lower than the above, but they do not scorch unless they are either too close to the glass or have been drawn out too much by fire heat; but open one

of the above houses again immediately after syringing while the sun is still very hot, and scorching would take place as surely and perfectly as if the plants had been placed on the fire.

Scalding, scorching, and rust are caused by too rapid evaporation, and the manner of giving air is at the bottom of it all.

"Admit air early" is very good advice, and must be attended to, but it is not all that is required. See that your thermometer which you trust to so faithfully is not misleading you. Is it encased in metal, or does it hang against any powerful conducting substance? Does the sun shine directly on it? Hanging directly in the sun's rays a thermometer is worse than useless because it does not tell the truth. The mercury may rise perhaps 5° in a quarter of an hour, while you are giving air carefully a little at a time, and flattering yourself how nicely you are doing it without the possibility of a check on the tenderness of foliage; but a thermometer backed and shaded on each side with wood will tell a very different tale, for while the other is rising 8° or 10° this will only just begin to show signs of life. Here, then, is a danger, that while watching a thermometer and giving air in accordance with it we may be actually lowering the real temperature although the mercury is rising.

There is another popular notion which I wish to call attention to in connection with the above, it is about sprinkling floors, walls, &c. "Sprinkle more," say our advisers; this, too, may be very good advice, but sprinkle when? What is the effect of sprinkling the floor and walls of a hothouse on a bright summer's day while the ventilators are wide open? Why, certainly to lower the temperature and almost certainly to make the atmosphere drier by evaporation. Did ever anyone see a drooping plant revive simply from pouring water about the paths while the ventilators were wide open and the sun's rays unobstructed? I say, No. Sprinkle as much as you like as soon as the house is closed, and the plants will revive almost magically; but sprinkling for this purpose at any other time can do no good, and I think it generally does harm.—WILLIAM TAYLOR.

ROSES IN POTS.

No more enjoyable flowers have lately been exhibited at the London shows than Roses in 7 and 8-inch pots. These have chiefly been staged by Mr. Turner, Slough; Messrs. Paul and Sons, Chesham; Messrs. Veitch & Sons, Chelsea; Messrs. Lane & Son, Berkhamstead; and Messrs. Wm. Paul & Son, Waltham Cross. Only one amateur grower (Mr. Moorman) has as yet staged really well-grown plants this year; but the fact that he has done so, also that the garden under his charge is only a small one, where the Roses are chiefly grown in brick pits and unheated frames, suggest how many others there are who have the same or greater conveniences, but as yet have not commenced the cultivation of Roses according to the most approved mode of growing them. Roses in pots there are in plenty, and excellent blooms are afforded from them in many gardens, but when fine blooms are combined with handsome plants the Rose is seen in its fullest beauty.

There are but few now-a-days who cultivate show Pelargoniums who are satisfied with plants having three or four upright growths 3 feet high with a tuft of flowers at the top and no foliage at the bottom. They endeavour to have dwarf symmetrical plants, the foliage almost hiding the pots, and the plants greater in breadth than they are in height. The lowermost shoots on such plants are secured down to the rim of the pot and trained out almost horizontally, the centre of the plants being so furnished as to present the outline of a flattened globe. Such plants are very beautiful, and vastly superior to others which have been permitted to grow in their natural upright manner, forming pigmy trees with brown bare branches, exhibiting not art and culture—not Nature in her own free and charming guise, but a combination of Nature cribbed and art distorted. Roses in pots are as amenable to training as Pelargoniums. The Roses which have been exhibited by the growers named have been remarkable for their grand blooms, luxuriant foliage, sturdy growth, and skilful training. The foliage did indeed almost hide the pots, and from twelve to thirty shoots were trained with the greatest regularity, and each terminating with a splendid bloom. What other plants can surpass these, or even equal them? No others which can be purchased so cheaply and grown so easily. Their cultivation, therefore, as suggested in your report of the Regent's Park Show, should be encouraged by every possible means, and prizes certainly ought to be offered for them for

which amateurs alone should compete." Mr. Moorman, who some time ago communicated an excellent article on the cultivation of Roses in pots, would do well to return to the subject and tell the best sorts to grow and how to grow them. Medium-sized plants, such as those referred to, could not fail to be appreciated wherever provided, and there is no reason that they should not be seen in the majority of gardens where flowering plants under glass are cultivated and cherished.—W. S. P.

TRIFLES—GIVING AIR.

"There is such a bother made here about a trifle." These words came to me on the wind as I turned away after having given one of my assistants a slight "wiggling" on his want of attention in the matter of early air-giving in the forcing house. I shall not soon forget the stern, hard-to-learn lessons of attention to trifles which I learned from an old Yorkshire gardener. He was one of the old school: shrewd, clever, and practical, but having something of the irritability of genius, was easily provoked, especially so by little things, little neglects and thoughtlessnesses, and could lay down the law in his choice vernacular with, sometimes amusing, and always positive impressiveness. He used to say that the top lights of every glass house ought to be opened a little every morning if only for a quarter of an hour, just to let off the bad air and vapour. The old man's theory is good, very good, the only evil is the pushing of it to extremes. My own opinion in this matter is, that if a little, ever so little, air cannot for economy's or other reason's sake be left on all night in forcing houses and pits, a little should be given early in the morning at the highest point of the house or pit—that is, if the wind is not blowing-in at that point. If the wind—a spring north-easter, let us say—be blowing in the direction of the top air-openings, it would be much better not to open the lights there, but to open them at the bottom. As to the quantity of air to be admitted, each man's skill must be the regulator in this matter as in so many other gardening operations and arrangements.

In those peculiar days we so often have in the early part of our English seasons, "summer days and winter nights," if a little air is not admitted early in the morning the plants run a double risk, first of being almost parboiled by hot vapour, and then to counteract this high temperature, the effect of the burning sun I have mentioned, of being half frozen by the icy air which is allowed to come in to lower the house to a healthy temperature. Now, if a small opening had been made early in the morning at every opening sash, even though that opening be only quarter of an inch, the heated vapour would have so escaped, and the plants been so dry in consequence, that if the sun had raised the temperature to 90° or 100° there would have been no harm done.

It is difficult to make even most zealous assistants see the force of this. Youth and inexperience make them undervalue little matters. I would, however, impress this truism upon all gardeners, that "good gardening consists in attention to trifles." It has been well said, "Trifles make-up the sum of human happiness;" and inversely of its misery. And when another great man has defined genius as being "a capacity for taking trouble," attending to trifles, it becomes us all to think seriously about them. Our young people do not see these things as we see them, and remembering one's own weaknesses we must be as gentle and forbearing as we can. Young men, attend to trifles; old men, reprove kindly.—X.

UNHEALTHY VINES.

IMPERFECT root-action is undoubtedly the primary cause of most of the ills that Vines are heirs to, and the Editors have done well in calling special attention to the fact. The term clearly and unmistakably implies the existence of unhealthy roots, and unhealthy roots are caused by bad soil or defective drainage, or by both. The evil is traced to its source. Is not the remedy as clear as the day? Get rid of your bad soil, see that the fresh soil contains plenty of hard gritty matter, lay 2-inch drains 6 feet apart from back to front of the bottom of the border into a 4-inch pipe running along the front, and your Vines will cease to suffer from imperfect root-action.

This repetition of advice, often given but too seldom acted upon, will show how much importance I attach to the matter. I may add that in my own practice I do not rest content with well-laid drains, but keep myself constantly informed of their action by means of a shaft of brickwork, through which the

main drain passes after leaving the border, so that one can always see if the water passes away freely in a wet season, and, what is of equal importance—see that the waterings are thorough in a dry one by having it poured upon the top of the border till it flows freely from the drains at the bottom. —EDWARD LUCKHURST.

CLEMATISES AT REGENT'S PARK.

No one who has not seen the best varieties of these plants grown in the best manner and exhibited in the best style can form a just idea of the beauty of such a collection as Messrs. Jackman & Son of Woking have now on view in the gardens of the Royal Botanic Society. The plants are arranged in the corridor leading to the conservatory, which is filled from end to end with about four hundred specimens, and every plant is laden with splendid flowers. Many of the blooms exceed 9 inches in diameter; and embracing as they do all the shades of colour from white to violet, produce an effect which should be seen by all who have the opportunity of visiting the gardens. Many there are, however, who are unable to do so, and it becomes more necessary to note a few of the leading varieties of these effective hardy climbers. But although hardy, the plants exhibited have been grown under glass in a large light unheated structure, yet many of them have been outside all through the winter, and were only placed in the house in the spring. This is mentioned as illustrative of their hardiness, and as evidence of the simplicity with which Clematises may be cultivated for conservatory decoration.

A few of the most noteworthy varieties are the following—Lady Egmont (new), very delicate mauve suffused with rosy pink, deepening at the edge of the undulated sepals. The flowers are about 8 inches in diameter and are produced in profusion; they are also delicately perfumed. This variety has been recently certificated, and is undoubtedly one of the best yet raised. Florence is another new and very fine variety, pale lavender edged with pale purple, which was certificated at the same time. Duke of Norfolk is superior; lavender-coloured flowers and remarkably fine foliage. Earl of Egmont (new) is noticeable as being the darkest of all the early-flowering varieties; it is a free and continuous bloomer, and will be useful for many decorative purposes. Lord Beaconsfield (new), nearly blue, is very free and very fine; as also is Princess of Wales, a grand, smooth, bright lavender-coloured flower. Alba Magna, nearly white, is the largest flower of all and is a great acquisition. It is a new variety of the lanuginosa type.

The following six varieties are also new, and are being sent out for the first time this year—namely, Duchess of Edinburgh, white, double, remarkably fine; Maiden's Blush, bluish white, effective; Mrs. Hope, satiny mauve, very full and fine; Morikata oké, French white with undulated sepals, very free; Robt. Hanbury, bluish lilac, glossy, and of excellent form; and Duchess of Teck, white, with a faint mauve bar, flowers of great substance and very attractive.

Amongst older varieties, extra fine, are Lord Derby, lavender; Fair Rosamond, bluish; Lord Mayo, rosy lilac; Sir Garnet Wolesey, nearly blue, with maroon bar; Stolla, light violet; Vesta, creamy white; Lady Caroline Nevill, bluish, mauve bars; and Sir William Kennett, deep lavender. Gloire de St. Julien is also worthy of notice from its commanding long-petaled satiny-blush flowers; it is very distinct. Countess of Lovelace is still the finest of the lavender-blue double varieties and should be largely grown, and Lucie Lemoine is an excellent double cream-coloured variety.

The above varieties are the finest at present in cultivation, and demand notice from their sterling qualities. The Exhibition closes on the 26th inst. The display is rendered further attractive by the introduction of a few highly coloured standard Rhododendrons, and a fringe of *Buonymus radicans* alternated with the blue, hardy, evergreen trailing plant *Lithospermum prostratum*.

THE PEACH CROP ON OPEN WALLS.

"Cold and wet,
No Peaches you'll get."

SUCH was the miserable refrain which kept recurring through my head during the latter part of April, and it has proved to be almost literally true, not only of Peaches, but of Nectarines and Apricots. I do not mind the cold alone, for with my coping boards I can almost defy it; but when the wet comes driving upon the swelling blossom buds day after day and also upon the wall, rendering it so cold that the frost lays its icy grasp upon bud, branch, and brickwork, it is then that one loses hope. Such has been the lamentable state of things this year, consequently the crop is a failure; and I am not surprised to hear from my friend Mr. Walker of Dunrobin that "it is the general cry that there are but few Peaches, Nectarines,

and Apricots—not one fruit where there ought to be dozens, the flowers having fallen off just at the time the fruit ought to have been setting, even upon trees which were covered every night with canvas."

What is the remedy? Glass, sashbars, and brickwork. That is my answer, and acting upon it I am now trying to ascertain the cost per running foot of putting a glazed covering to a wall 10 feet high. Can anyone give me any reliable figures?—EDWARD LUCKHURST.

FORGET-ME-NOTS.

EVERY year these charming spring flowers appear to become more popular. They are grown in thousands both for conservatory and garden decoration, and well they deserve to be, for few dwarf spring-flowering plants are more effective, and none are more easily cultivated. It is not often, however, that new varietal command notice, yet there are not wanting signs that those at present in cultivation will be improved upon both in size of flowers and their colours. Not long ago Mr. Groves of Shortlands, Kent, exhibited an enlarged form of *Myosotis*



Fig. 50.—*Myosotis Weirleigh Surprise*.

disitiflora at South Kensington. This is a variety of great promise, and will probably be seen again; but the most distinct Forget-me-not that has lately come under our notice is *Weirleigh Surprise*. It was raised by Mr. Harrison Weir at Weirleigh, and is now being distributed by Messrs. James Carter & Co., of 297, High Holborn, London, who have enabled us to submit a figure of it. It was exhibited last year at South Kensington, and every flower on the plant was as distinctly striped as is shown in the engraving. As to the origin of the variety, Mr. Weir states that for some time he had been planting the white and blue together with the hope of getting a cross, and had tried pollenising them but without success. On going to the part of the garden where the rubbish heap is, he saw a number of plants of the *Myosotis* had come up on the bank, and directed they should not be disturbed until they bloomed. The first that did so to his delight was the one now called by the name of *Weirleigh Surprise*.

MARÉCHAL NIEL ROSE.

THE ROSES which I forwarded to your office last week were grown as follows:—The Vines in a lean-to house were old and unprofitable, and they were taken out and two *Maréchal Niel* Roses were planted in the border and trained inside to the wires which formerly supported the Vines. The Roses are worked upon the *Bris* stock, and have grown very strong. They have only been planted a little over two years, and now they nearly cover the whole roof of the house. Some of the young shoots are as strong as a walking stick. They have flowered very freely, and the flowers have been all about the same size and colour as those which you saw. There were 573 flowers open on the 11th of May, and we had cut probably

a hundred before I counted them. I can recommend the plan mentioned for growing this glorious Rose in perfection, and I think wherever room can be afforded to train one under glass similar to a Vine it will prove worthy of the space it occupies.—W. CHRISTISON.

[We once saw a large house planted with *Maréchal Niel* Roses. It was originally a vineyard from whence the Grapes were sold, but the sale of *Maréchal Niel* blooms proved much more profitable than the Grapes.—Eds.]

ROYAL BOTANIC GARDENS, MANCHESTER.

GREAT FLOWER AND FRUIT SHOW.

THE great Whitstaithe Show (which has long been one of the principal meetings of the year for exhibitors and visitors from all parts of Great Britain) opened this year on the 18th and closes on the 25th. There is a truly grand display of plants, flowers, and fruits. It is said by those who have been exhibitors since the commencement of the exhibitions to be the best Show yet held. If there is a slight falling off in some of the classes, which must be expected owing to changes in taste or fashion—as, for instance, the great pyramid plants of *Azaleas*—these could very well be dispensed with in the presence of the magnificent specimens of *Roses* exhibited by Messrs. Turner of Slough, and Paul & Sons, The Old Nurseries, Chesham. It is also admitted that *Orchids* were never shown better. The trade collections of Mr. B. S. Williams of Holloway, and the Messrs. Rollison of Tooting, London, contain well-grown specimens of the rarest and choicest species and varieties in cultivation. Private collections, too, have a magnificent effect arranged on the opposite side of the building. Especially fine are the collections of O. O. Wrigley, Esq.; and equally well grown, if smaller specimens are those staged by Dr. Ainsworth, J. Broome, Esq., and others. And here we may state that some little dissatisfaction was expressed at the way in which some of the specimens are made-up, and we do confess that making-up pans and pots of *Orchids* is carried a little too far. A great grower has, perhaps, scores or hundreds of some species, and he fills a pot or pan with a dozen plants or more, sometimes with as many distinct varieties of the same species. Of course the larger the specimens are the greater is the effect of the collection. It would stop the murmurs if promoters of shows would clearly specify in their schedules the requisite number of pots or pans of *Orchids*; when the schedule says "Twelve *Orchids*, distinct," then the exhibitor who makes-up pots or pans with several varieties in each does not comply with the terms of the schedule.

Another very pleasing feature in the Show is the herbaraceous plants. It seems a descent in the scale from exotic *Orchids* to the humble alpine, but it is not so. *Orchids* as shown at Manchester are the flowers of the very few; alpine and herbaraceous plants are the flowers of the many. Messrs. J. Dickson & Sons, Newton Nurseries, Chester, and Messrs. Rollison of Tooting, deserve great credit for the care they have taken in exhibiting such finished collections as they exhibited on this occasion. A word of praise ought also to be given to a collection of exotic Ferns from O. O. Wrigley, Esq., of Bury. Such well-grown specimens of the choicest species of *Gleichenias*, *Davallias*, &c., were never before exhibited. Hardy Ferns, too, are well grown, and two collections at the bottom of the large tent command general admiration. Besides the large conservatory, which is devoted to exotic plants, there are two other large tents filled with plants, and the arrangements of the different classes are admirably carried out to give the best effect. This, of course, entails additional labour on those entrusted with the duty of reporting for the public press, but of this we make no complaint as it is unavoidable; but we would suggest one improvement. The Judges are divided into sections, two in each section, under the care of a "Steward"; one set Judges, say, from Class 1 to 12, Why cannot the Steward be furnished with prize cards, and as one class is judged place first, second, and third to the collections? As it was no awards were fixed until the Judges had finished their work, and what makes the matter worse is that the names of the exhibitors are not known until the prize cards are fixed. In the case of the principal collections this was not done until very nearly the time for opening the Show.

The annual dinner of the Council and Judges was held at the Trafford Hotel near the Gardens. Dr. Watts, President of the Council, presided, Mr. Bruce Findlay occupying the vice-chair. The Treasurer's report by Mr. J. Broome congratulated the Society, on this its jubilee year, on the prosperous state of its finances, and if the Show is successful it is expected that it will be entirely free from debt this year. Certainly the present Council deserve great credit for the exertions they have made to place the Society on a sound basis, and some extent of their difficulties may be ascertained from the fact that the Council have paid £30,000 in interest on debts. It ought also to be

known that, like the Royal Horticultural Society of London, neither the Council nor anyone else have a personal interest in the matter, and that after the debt has been paid all superfluous cash will be devoted to the cause of horticulture or floriculture. The Rev. Canon Hole, in proposing "Precedence to the Royal Botanical and Horticultural Society," said that the present Exhibition afforded the working classes an admirable opportunity to become acquainted with the works of Nature at a low charge, and spoke strongly in favour of the opening of such gardens on Sunday. If he was told, "Would not you rather that the people went to a place of worship?" he would say, "Why shouldn't a garden be a place of worship?" At all events it was a better place of worship than a publichouse [applause]. Mr. Shirley Hibberd proposed "The Exhibitors," to which Messrs. B. S. Williams, Rollison, and J. McCallum responded, all of them uniting in the warmest tribute to Mr. Bruce Findlay for his courtesy and for the admirable arrangements made for their comfort and convenience, stating that they looked forward with the greatest pleasure to the Manchester Exhibition.

A show of Tulips and other cut flowers was announced for Friday (to-morrow), but it is certain that the Tulips will not be in, and the show is postponed. Florists and others have been much gratified at the increasing favour in which florist flowers are held all over the country—a result principally due to the patronage they have received from the Council of this Society, and if they had not been hampered with difficulties much more would have been done.

STOVE AND GREENHOUSE PLANTS (amateurs).—Lo Class 1—twenty plants, ten foliage and ten in flower—the prizes are £30, £20, and £10. The groups are well arranged, with the flowering plants in front, backed with large handsome specimens of foliage plants. The first and second collections are very nearly equally balanced, and at first sight we placed the collection from Preston first; but we doubt not that the Judges were right, as on a closer inspection one of Mr. Shuttleworth's large *Gleichenias* we found was past its best, and his flowering plants are certainly not quite equal in merit to the Cheltenham collection. Mr. E. Pilgrim, Fern Lawn, Cheltenham, is first with a well-flowered, healthy specimen of *Boronia serrulata*; *Tetratheca cricifolia* hirsuta, a grand specimen; a well-grown example of *Pimelea spectabilis*; *Acrophyllum venosum*, very fine; *Azalea* Flag of Truce; *Erica Victoria Regina*, and *E. Cavendishiana*; *Clerodendron Balfourii*; and a fine variety of *Anthurium Scherzerianum*. His foliage plants comprise some noble Palms, a grand *Euphorbia villosa*; *Croton pictum* and *Wiesmannii*, also a very fine *C. longifolium variegatum*; *Pandanus Veitchii*, well marked; and a handsome specimen of the rare *Gonoma Seemannii*. Second T. M. Shuttleworth, Esq., who has a very handsome specimen of *Boronia pinnata*, exceedingly well grown and covered with its pretty rose-coloured flowers; *Dendrobium nobile*, well flowered; *Statisia profusa*; *Aphelxis macrautha* purpurea, and the variety *rosea*; *Acrophyllum gracile*; *Erica Victoria Regina*, and *E. Cavendishiana*; *Anthurium Scherzerianum*, and a white *Azalea*. His foliage plants are *Gleichenia spenziana* and *G. dichotoma*; *Cyssa crenata*; *Croton undulatum*, remarkably well coloured; *Stenogramma grandifolia*, with noble foliage; *Cordyline indivisa*; *Dion edule*; *Dasylirion gracile*; and a fine *Coccol Weddelliana*. So keen was this contest that the Judges had to go by points, and after careful examination found only three more for the first collection than the second. Mr. J. Rylands, Longford Hall, Stretford, Manchester (Mr. G. Smith, gardener), is third with very creditable examples. He has a fine *Pimelea spectabilis* and a well-grown *Alcea* Louisii.

Two foliage plants, six flowering and six foliage.—H. Samson, Esq., Brunswick House, Bowdon (Mr. W. Lingford, gardener), is first. He has a grand *Hedera* *ulmifera*, a well-grown specimen of *Exora coccinea*, exceedingly fresh and healthy examples of *Gleichenia flabellata*, *G. rupestris*, and as fine a specimen of *Coccol Weddelliana* as any in the Show. T. M. Shuttleworth, Esq., is a good second. *Boronia pinnata* and *Hedera* *ulmifera* are fine amongst flowering plants. In foliage plants there are two handsome *Gleichenias* and a grandly coloured *Croton majesticum*. Mr. E. Pilgrim, Cheltenham, is third. Ten fine-foliaged plants are shown in excellent condition by T. H. Birley, Esq., Hart Hill, Pendleton (Mr. E. Elkin, gardener). He has a good *Cordyline indivisa*, a noble *Seafortia elegans*, and a graceful *Coccol Weddelliana*. The second prize goes to S. Schloss, Esq., Osborn Villa, Bowdon (Mr. W. Cardwell, gardener). Mrs. Leech, Goree Hall, Staleybridge (Mr. C. Goodal, gardener) is third. In the nurserymen's class for twelve stove and greenhouse plants in flower there is only one exhibit; it is from Mrs. E. Cole & Sons, Fog Lane Nurseries, Withington, and to it the first prize is awarded. The plants are not of large size, but very healthy. The collection includes examples of those already named and a *Bougainvillea glabra*.

AZALEAS.—£20, £12, and £5 are offered in three prizes for ten specimens each, and yet only one exhibitor came forward—H. T. Broadhurst, Esq., Woodhill, Prestwich (Mr. J. Mellor, gardener). The plants are mostly of old varieties and of good size, being also fairly well flowered. The Judges awarded

with very handsome specimens of *D. Salmoena*, *Rebecca*, *terminalis alba*, *Moerena*, and *exelsa* as the most distinct. Mr. B. S. Williams second, and has *D. magnifica*, *ferrea* grand, *ambalis*, *Baptistii*, and *Youngii*. Third, Messrs. Thyne, with good sorts.

ALPINE AND HERBACEOUS PLANTS.—This, as we have previously stated, is a most interesting exhibition, and is well worthy of minute inspection. To see so many of these attractive plants in flower at this season of the year is a treat indeed. Messrs. James Dickson & Co. have the following species and varieties very fine, and secure the first prize in the class for eighty plants in 8-inch pots:—*Sedum brevifolium*, *S. acro aureum*, *S. saxangulare*; *Spiraea palmata*, *Tulipa retroflexa*, clear yellow, and *T. cornuta*; *Allium triquetrum*, *Scilla patula pallida*, *S. cernea rosea*, *Frimula corticoides lilacina*, *Iberis gibraltaris*, *Rhodiola americana*, *Lilium Thunbergianum fulgens*, *L. aurantiacum*, *Dodecatheon Jeffreyanum*, *J. media elegans*, *Phlox canadensis*, *Viola palmata*, *Alyssum saxatile*, *Sempervivum ciliatum*, *Tulipa cornuta*, *Aquilegia alpina*, *A. vulgaris*, *A. bicolor*; *Sempervivum* of sorts, *Saxifraga umbrosa*, *S. umbrosa Melvilli*, *S. peltata*, *S. cristata*, *S. pinatifida*, and *S. granulata fl.-pl.*; and *Sedum arboreum*. Messrs. Rollison are second, and they also have a fine collection, which for want of space cannot be noticed in detail. There are classes for amateurs, but their exhibits here are not of such a high order of merit, but some fine plants are shown. T. H. Allen, Esq., Manchester, is second with twenty-four plants; J. W. Baker, Esq., The Sycamores, Sycamore Grove, Manchester (Mr. T. Byrne, gardener), is third.

NEW AND RARE PLANTS.—Classes are provided both for nurserymen and for amateurs, but very few plants are exhibited which have not been already described. Mr. B. S. Williams takes the best twelve specimens; they comprise good examples of *Artocarpus Cannonii*, *Echmea Marie Regis*, *Dracena terminalis alba*, and *Braselia filamentosa*. Messrs. Rollison are second, and Mr. Ley of Croydon third. In the amateurs' classes T. M. Shuttleworth, Esq., is first; J. Rylands, Esq., second; and F. H. Allen, Esq., third. Joseph Broome, Esq., has a first prize for six *Dracenas*. O. O. Wrigley, Esq., is second, and E. Boden, Esq., third. J. Broome, Esq., has also a first prize for four *Araucarias*.

There is an open class for a collection of *Nepenthes*, *Sarracenia*, *Cephalotes*, &c.: two interesting collections are exhibited, and equal first prizes are awarded to O. O. Wrigley, Esq., and J. Fildes, Esq.

Collections of plants arranged for effect (space not less than 22 feet by 15 feet). Messrs. Thyne of Glasgow gain the first prize in this collection; it is backed with choice Palms, the front being filled with the ordinary Covent Garden plants, such as *Pelargoniums*, *Lily of the Valley*, &c. They fill 60 feet in length of space; and Messrs. Yates & Ley, who gain second and third prizes respectively, had but 25 feet each, occupied in a very effective manner. Twenty miscellaneous plants are exhibited by amateurs. John Rylands, Esq., is first; H. Sampson, Esq., Bowdon, second; and Mrs. Douglas, Chesdale, third.

A collection of stove and greenhouse plants is sent from the gardens of Sir James Watts, not for competition. It contains a fine pair of *Yucca filamentosa variegata*, and an immense specimen well flowered of *Genetilis Hookeri*.

FRUIT.—As was to be expected after such a backward season, and the Show being held so early, the portion of the table reserved for fruit does not make a very imposing display. There are but two collections. That from Lord Carington, Wycombe Abbey, High Wycombe (Mr. G. T. Miles, gardener), contains two *Jamaica* and two *Queen Pines*, *Black and White Grapes*, *Brown Teatoy Figs*, *Black Cressina* and *Elton Cherries*, *Strawberries*, and a *Golden Queen Melon* in good condition; the first prize is awarded. The other collection comes from Lord Delamere, Vale Royal, Northwich (Mr. R. Milne, gardener). He has very good *black and white Grapes*, *Figs*, two dishes of *Peaches*, *Strawberries*, and an *unripe Melon*. It is a mistake to exhibit unripe fruit, as if it counts for anything in a collection it counts against an exhibitor.

For two bunches of *black Grapes* there is some fine-coloured fruit. The prize collections are as good as any we have ever seen in May. The Earl of Crawford and Belcarras, High Hall, Wigan, is first; Lord Bagot, Rugeley (Mr. Bannerman, gardener), second; and Lord Delamere, third. Except the first-prize bunches the others are rather unripe. For two bunches Lord Bagot is first with a bunch of *Foster's Seedling* and *Duke of Buccleuch*; W. Binkhorn, Esq., St. Helen's (Mr. J. Smith, gardener), second with *Muscad*; J. C. Antrobus, Esq., Eaton Hall, Congleton (Mr. J. Heaman, gardener), has the third prize with fairly ripe *Foster's Seedling*.

Strawberries in pots are of no great merit, but they ought to make an interesting exhibition, as that is the right way of showing forced *Strawberries*. Mr. R. Gammon, The Limes, Withington, is first for twelve pots; J. Rylands, Esq., second; and the Earl of Ellesmere, third. The first exhibitor exhibits *President*, and the others *Vicomtesse Hericart de Thury*.

Cucumbers are shown by J. Rylands, Esq.; J. H. Birley, Esq.

Mr. Elkin, gardener; J. G. Adam, Esq., Ashton-on-Mersey; H. Beard, Esq.; and J. Leppo, Esq.

It would occupy too much space to enumerate even the collections of garden implements of every description—hothouses, garden frames, &c., with which the lawn in front of the conservatory is covered; and we should like to notice one or two things in the miscellaneous collections of plants. Messrs. James Dickson have a very good group of choice *Palms* and other stove and greenhouse plants of considerable merit. Mr. Smith of Worcester has a group of plants, conspicuous in which is a very striking variety of a new *Clematis* named *Madame George*. The colour is new to the *Clematis*, indeed we do not know any plant that has flowers of a similar shade of colour. It is a deep violet-purple, almost maroon. The plant is of very free growth. Nor should we fail to notice a well-grown collection of *Amaryllis* from Mr. James Anderson, Meadow Bank, Uddingston. N.B.—There are forty-two varieties, all seedlings. None of them are named, nor are they numbered for future identification. Many of them are of first-class merit, and the collection is awarded an extra prize.

NOTES AND GLEANINGS.

THE numbers who visited the gardens of the ROYAL HORTICULTURAL SOCIETY at South Kensington on Whit-Monday were 6936, at 2d. per head, equal to £57 16s.

— We wish that authentic instances of TREE-LONGEVITY were sent to us. Two instances we have recently noticed are that in the Paris Jardin des Plantes there is living the first *Acacia* brought to Europe. Vespasian Robin, gardener to Louis XIII., introduced it in the year 1635. In the orangery at Versailles the death is announced of "Grand Bourbon," the finest of the Orange trees, at the great age of 415 years. Another of our wishes is that gardeners would send us reports of their experiments, whether successful or failure; for, as was said to Liebig, "Your method of scientific inquiry is rapidly changing the features of the most ancient and important of human arts—the culture of the soil;" and Liebig recorded his mistakes as well as his successes. "There is no harm," he observed, "in a man's committing mistakes, but great harm in his committing none, for he is sure not to have worked. . . . An error of which you have become cognisant do not keep in your house from night till morning."

— At the last meeting of the Royal Horticultural Society, Lord Alfred S. Churchill, V.P., in the chair, the following THIRTY-THREE CANDIDATES were duly elected Fellows of the Society—viz.: Miss Vana Agnew, W. J. Alt, H. Balderson, Mrs. Bedborough, Francis Bell, Lord Edward S. Churchill, M. C. Close, M.P., Lady Cranstoun, Mrs. Crofton, Sir Barrow H. Ellis, K.C.S.L., Rev. John R. Fielden, M.A., Harry Goddard, Miss Grisewood, Mrs. Howard, E. Stafford Howard, M.P., William J. Jefferies, L. A. Killick, T. F. Mould, Miss Oswald, Mrs. Phillips, Horace C. Pilcher, E. Pilgrim, J. C. Powell, Colonel Sawyer, Major R. N. Dawson Scott, R.E., H. Sydney Smith, James Smith, Mrs. Tudor, Alfred Weeks, Miss Annie M. Whitlaw, John Wood, John Young, Earl of Zetland, &c. A list of twenty guinea members elected by the Council was also announced. At the previous meeting on May 2nd thirty-seven Fellows and nineteen guinea members were elected.

— We remind our readers who are interested in the Centennial Exhibition of the BATH AND WEST OF ENGLAND AND SOUTHERN COUNTIES ASSOCIATION that six days' notice of entrance in the Rose classes must be given to the Hon. and Rev. J. T. Boscawen, Show Yard, Bath. The two ten-guinea cups for Twelve Tea Roses ought to bring out a fine display of these charming flowers from both amateurs and nurserymen. The Show opens on Tuesday, June 5th.

— The Royal National Tulip Society's EXHIBITION, which was to have been held on the 25th of May, is postponed. The Show will be held at the Botanical Gardens, Manchester, on Tuesday, June 5th, under the same conditions as stated in the schedule already published.

— THE FLOWER SERMON annually preached on Whit-Tuesday at the parish church of St. Katharine Cree, in the City, attracted a crowded congregation on the evening of the 22nd inst. The service was altogether a happy and interesting one. The church was filled with children and young persons, each of whom brought some kind of flower. Dr. Whittemore preached this year on the Fig tree, founding his discourse on the words in the 3rd chapter of Habakkuk, "Although the Fig tree shall not blossom, yet I will rejoice in the Lord." The rector, in pressing home many lessons from the Fig tree, incidentally drew a refreshing picture of the now crowded neigh-

bourhood of his church in the days when monastic gardens were there, in which the monks cultivated Fig trees. He reminded the older people in the congregation that trees used to grow in some of the City courtyards, which were supposed to be the remains of Fig orchards, though now the district was so altered that to some it would seem singular that a flower sermon should be preached in it. The name of Fig Church Lane and old pictures of the neighbourhood showing ladies weaving garlands conveyed an idea of the once rural aspect of the spot. The small seed from which the Fig tree springs was made by the rector to convey to the children the lesson that no one was so small as to be of no use. The appearance of the fruit on the Fig tree before the leaves grow prompted the motto—"Deeds before words," and the injunction to be a Christian rather than to parade Christianity.

— We have received the schedule of a great HORTICULTURAL EXHIBITION which is to be held at ANTWERP from the 19th to the 22nd of August, in connection with the fêtes to celebrate the 300th anniversary of the birth of Rubens. It consists of 127 classes; and the prizes, which consist of gold, silver-gilt, silver, and bronze, are both numerous and valuable.

— THE REV. T. BROCKWAY has alluded to the VEGETATION OF MADAGASCAR as follows: "It was not yet the season for flowers, but there were some here in warm spots. Sometimes I saw Orchids hanging from trunks of trees, and found one beautiful specimen of a terrestrial Orchid in full bloom, and in a sheltered nook recognised the pretty blue Lobelia. Ferns of great beauty abound, among which the Tree Fern and the Maidenhair are frequently seen. But it was almost worth the trouble of the journey to see the Bamboos. These with the Roffia tree and the Traveller's Tree, only found in hot regions, showed the luxuriance of vegetation in this tropical climate."

— A CORRESPONDENT writes:—"What particular delight can it afford Mr. Dodwell to be continually carping at 'D. Deal?' I have read his observations at page 370, and I am of opinion that his own statement is not absolutely correct when he says, 'I paid prize money to eleven.' Did not that include exhibitors of Polyanthuses? and therefore 'D. Deal,' was quite correct in saying that of Auricula exhibitors 'seven exhibitors competed.'" [Did Mr. Dodwell pay prize money to eleven exhibitors of Auriculas? If he did not he made a misleading statement.—*Ens.*]

— We have received the first number of the "JOURNAL OF FORESTRY," a monthly publication published by Messrs. Rider of St. Bartholomew's Close. The object of the journal is to "bring forestry into the foreground as a science, an art, an economic department, and a source of social and personal delight." The importance of establishing a school of forestry in Britain is ably urged, and many excellent articles are submitted on various topics which come within the province of the volume. It is a publication of much promise, and can be recommended to landed proprietors, and, indeed, to all who are interested in the management of woods and who are identified with the growing of timber for pleasure or profit. The first number is calculated, from the variety and soundness of the articles it contains and from its general good appearance, to meet with a favourable reception from those who are interested in the management of estates. The volume is of large 8vo. size, and contains seventy-two pages of excellently printed matter. It deserves success.

— REFERRING to "F.J.'s" inquiry for "Particulars of treatment of GOLD FISH in a pond in the garden," Mr. Butler of Bletchingley states that last spring he turned two dozen into a pond about 30 feet in diameter, supplied with water from the natural drainage of the adjoining land, and having so turned them in nothing further was done. They did very well until November, when they disappeared, and as they did not again show themselves during the winter it was concluded they were dead, until the following passage was read in Knight's "Museum of Animated Nature":—"In the winter carp appear to undergo a partial state of torpor, burying themselves in the mud or in deep holes in the bank." The re-appearance of the gold fish was therefore hoped for, which hope has not been disappointed, for within the last fortnight they have shown themselves, and are as lively and well as can be desired.

— We have received the following note from a Dorsetshire correspondent:—"I send you two or three blooms of MISS BATEMAN CLEMATIS, which should be pure white. You will observe that they are as green as jealousy. They are taken

from a plant against a south wall which last year bloomed splendidly, and appears now to be in most robust health, being covered with blooms, but as yet they are all like the sample enclosed. Can you account for it? It is exceedingly annoying, just as the summer is here and the Roses begin to cover the walls, to have these green-eyed monstera spoiling all." We think the cold wet spring and the absence of sunshine has caused this abnormal feature.

— ONE of the finest light AZALEAS that has come under our notice is Apollo. We recently saw some plants of this flowering in the collection of Messrs. Veitch, and even when associated with such excellent sorts as *Mlle. Leonie Van Houtte* and other approved Belgian varieties its superiority was manifest. The flowers are almost pure white, but a few are irregularly striped with pink. They are large, well formed, and of good substance, and are produced in great profusion. This Azalea has been recently exhibited by Mr. Charles Turner. It is almost certain to find its way into all collections, and the sooner the better, for it is a splendid variety.

— We have received the following note on Mr. Wilson's leaving the Crystal Palace:—"I am sure that none of the readers of the Rose journal who ever exhibited Roses or other plants at the Crystal Palace can have read the announcement at the conclusion of your article on the Crystal Palace Flower Show without great regret—viz., that Mr. Wilson has been dismissed. I never met with a more kind or courteous official, or one whose conduct to exhibitors of all classes was more to be praised. I am exceedingly sorry to find that the exhibitors at the Crystal Palace will lose the benefit of his services, and I would offer to him the condolence and regret of at least—A WILD SVAOE."

— THE flower show to be held at the ORLEANS HOUSE CLUB, TWICKENHAM, on Friday and Saturday next the 25th and 26th inst., is expected by the managers—Messrs. Rollison & Sons, Tooting—to be a very good one. The prizes are certainly liberal. The large Roses from Slough and Chessnut are invited, for we observe that in class A for ten Roses two prizes only (£20 and £15) are provided, three prizes being offered in the remaining classes. There is a class for twenty Roses in 8-inch pots (open), and we are glad to see an amateurs' class for eight plants. Azaleas, Orchids, stove and greenhouse plants, hardy perennials, new and rare plants, &c., are provided for. The total amount of the prizes offered exceeds £350.

— ON page 457 of our last volume a correspondent under the signature "CAPE" inquires for plants of the Cape species of *Polygonum*. If he will send us his address we have a communication for him which we will forward.

— ONE of the finest Ferns of recent introduction is *ADIANTUM PALMATUM*. It is being increased as rapidly as possible in the chief nurseries. We lately observed a fine stock of it in Mr. Williams's nursery at Holloway, where it is popularly called the "greenhouse farleyene." It has the same large pinnales as *A. farleyense*, and the rachides are similarly slender. It is one of the most elegant Ferns in cultivation, and will be the more popular on account of its comparative hardiness. It was discovered by M. Roezl in Peru at an altitude of more than 10,000 feet, hence the temperature of a warm greenhouse will suit it admirably.

— FRUIT.—Texas producers expect the largest fruit crop this year which has ever been harvested in that State.

ANTHURIUM SEEDS POISONOUS.

WHEN I entered my Orchid house the other morning I immediately perceived a horrible smell, and knowing that it proceeded from a dead rat I commenced searching for it. I found it under the stage. On looking about I saw that the animal had been eating some seeds of *Anthurium Scherzerianum* which had just been gathered and placed in a heap, but which the rat had scattered all about, and the traces of its having eaten several were evident from the fact of the seed pods being emptied of their contents. Now the effect must have been very immediate, as the rat had evidently, after enjoying its last meal, jumped down from the stage and died at once. We have no rat poison about that I am aware of, as I do not allow the use of it; and I naturally conclude that the *Anthurium* seeds contain deadly poison. I send you this short account, as I should like to know whether a similar result has followed elsewhere; if not, it is as well that your readers should be warned against the dangerous foe which lurks in the

seeds of this grand stove plant. A gardener might unknowingly take seeds home, and young children's lives might be endangered or sacrificed if my theory as to the death of the rat is correct.

I have a robin's nest at present in a plant of *Polystichum angustatum* in my north house containing eggs, and a wren has also built in a little hole in the back wall, from which a half-brick has been taken. I had often seen the robin in the house, but could not find its nest, and I never should if my gardener had not pointed it out to me, so ingeniously is it concealed. Anyone can see the little wren's cosy abode.

—T. M. SHUTTLEWORTH, F.R.H.S., *Howick House, Preston.*

WATERING ROSES.

"A PARSON'S GARDENER'S" article in the *Journal* of May 10th is exceedingly interesting and not a little amusing also to such men as myself. Our *Journal* no doubt is read by numbers of rosarians who never exhibit, and who look upon the Rose simply as a garden flower, so that any article which has to do with the cultivation of garden Roses is of great value to a large class of your readers.

Your correspondent's letters have also been of great interest, not to say profit, to a large number of other readers, who do not need advice as to the cultivation of the Rose, but who are connected with the sale of such varieties as those named in his letters.

Soon after "A PARSON'S GARDENER'S" first letter on climbing Roses appeared in the *Journal* I happened to be in the Rose nursery of a large grower. He had had a number of summer Roses (Boursaults), evergreens, &c., for years, for which there was no demand. In the course of conversation he told me with delight, "I have got rid of all my old Boursaults, and Alice Grays, and Amadis; the demand for them has been enormous since that letter of the 'PARSON'S GARDENER' appeared." Now, if he has any left, which I should doubt, he will be able next autumn to dispose of *Chénéadolé*, *Juno*, *Coupe d'Œbé*, &c., which your correspondent so much recommends. In fact, there is no telling how much good the "PARSON'S GARDENER" has effected and may effect. He can even extend his beneficent hand over me; he can do good to what he is pleased to call a "globose ecclesiastic;" he can not only take pity upon a savage but help to clothe and feed him, for he recommends old "trees," not plants that are only one year old. I have such a lot of old Roses, and my beds are so full, that unless I can get rid of some of them I shall not be able to find room for any new ones next autumn. If I sell them now after this grand letter I shall be grateful, so will the nurserymen who supply me; in fact, there is not a class of Rose-growers, amateur or nurserymen, who will not, if they have not already, had reason to bless "A PARSON'S GARDENER."—WILD SAVAGE.

EARLY WRITERS ON ENGLISH GARDENING.

No. 32.

JOHN COAKLEY LETTSOM, M.D.

DR. LETTSOM was born in a small island in the Atlantic, near Tortola, called Little Van Dyke, December 22nd, 1714. His ancestors on the father's side originated from Letsom, a small village in Cheshire; on the mother's side they were lineally descended from Sir César Coakley, an Irish baronet, whose family uniformly possessed a seat in the Parliament of Ireland, the last of whom was Sir Vesey Coakley. Different branches of these families, during the government of Ireton in Ireland, went to Barbadoes in favour of the Commonwealth, and settled afterwards in different islands among that large cluster known to us by the name of the Leeward and Windward Islands.

When only about six years of age he was sent to England for his education. His future destiny seems to have been determined by the accidental circumstance of his landing at a seaport where Mr. Fothergill, then a celebrated preacher among the Quakers, and brother to the distinguished physician of that name, happened to be on a visit, and he was received into the very same house in which the preacher lived. By the advice of that excellent man, who conceived a parental affection for him, young Lettsom was sent to school to Mr. Thompson, uncle to the physician of the same name in London, who was then assistant in the school, between whom and his pupil an inviolable friendship commenced, and continued in advanced life with unabated fervour. Mr. Thompson's school was in the vicinity of Warrington, where Mr. Fothergill lived, and by

this means the superintendence of his education was continued till the period when the law admits of a youth choosing his own guardian, which, in consequence of the death of his father some years before, he did in the person of his friendly protector. The amiable pastor accepted the important charge, and placed him, with a view to his future profession, with Dr. Sutchiff of Settle in Yorkshire, intending, when of proper age and experience, to recommend him to the patronage of his brother, then in the highest practice of London.

After leaving Dr. Sutchiff young Lettsom came to town and assiduously attended St. Thomas's Hospital for two years. He then returned to his native land to take possession of a property which came to him by the death of his father and elder brother, the latter of whom, having contrived to run through an ample fortune in a few years, left very little of the family estate to be inherited by his successor, except a number of negro slaves. These, with that admirable spirit of benevolence which his conduct in maturer years uniformly displayed, he emancipated, and in the twenty-third year of his age, as he often told his friends, found himself £500 worse than nothing.

The fortune of Mr. Lettsom was henceforth, therefore, solely to be made as a medical practitioner, and so strenuous were his endeavours and so extensive was his practice in Tortola, where he settled, that in a very short time he was enabled to return to Europe and to visit the great medical schools of Paris, Edinburgh, and Leyden, at the latter of which universities he took his degree in 1769. To complete his education he visited, besides Paris, most of the places of resort for the relief of invalids abroad—as Spa in Westphalia, Aix la Chapelle, and various others. When he visited Paris, among other honourable recommendations he carried one from Dr. Franklin to Monsieur Dubourg. He was afterwards introduced to the celebrated Macquer, Le Roi, and other characters conspicuous at that period, with whom he corresponded till their decease.

After this circuit he repaired to London, where he finally settled, with the undeviating friendship of his old guardian and the patronage of his brother the physician, whose life he afterwards published as a tribute of gratitude and respect. About the year 1769 he was admitted a licentiate of the Royal College of Physicians; the year after he was elected F.S.A., and in the year succeeding that F.R.S.

Under such patronage—with a mind richly stored with science, matured by reflection, improved by early and dear-bought experience—success was insured, and its fruits were displayed, not in a fastidious conduct and ostentatious parade, but in benevolent schemes for the relief of the distressed poor and numerous charitable institutions to mitigate pain and repel disease. Many of these originated with himself, and of those that were planned by others several received from him considerable improvement, and all his active support. His subsequent marriage with an amiable woman and the addition of a considerable fortune by that marriage enlarged his means of doing good, nor did the necessary attention to the interests and happiness of a numerous family (the result of that marriage) permit his zeal in the cause of philanthropy to cool, or restrain the current in very arduous times of a well-directed liberality. He in many instances fostered genius, overshaded science, and expanded the circle of the arts in periods of individual and national distress unprecedented in the annals of this country, and his purse equally with his pen were devoted to their cause. Medicine and botany were particularly indebted to his zealous researches. Foreigners of talents and merit ever found a hospitable reception under his roof, and he constantly corresponded with the literati of eminence both in Europe and America.

In illustration of his unbounded benevolence may be mentioned the extraordinary and well-founded fact of his having been many years ago attacked, upon his return to town, on Finchley Common by a highwayman, with whom his remonstrances and pecuniary assistance operated so powerfully that, in the result, a public robber, impelled to transgression by extremity of want, was converted into a useful member of society.

The doctor's villa near Camberwell, called Grove Hill, the place of his retirement in the short intervals of professional business, is situated on a spot the beauty of which in early life had attracted his attention, and which he resolved to become master of if his circumstances should become sufficiently prosperous. His wishes were gratified, and the natural beauties of the situation were improved and brought to the

utmost perfection by his taste and care. The late John Scott of Amwell has celebrated it and paid a just tribute to the character of its owner in one of his poems; and Mr. Maurice, with whose various talents the public are well acquainted, has in an elegant poem given an animated description of the villa, and of the interesting scenery and beautiful landscapes with which it abounds. In this charming retreat Dr. Lettson had formed a museum of natural history, consisting of many rare and valuable specimens, as well as a botanic garden enriched with the choicest plants, brought at a great expense from the four quarters of the globe, all arranged according to the Linnæan system. The library was ample, and contained such a collection of books in all languages and on all sciences as few private gentlemen could boast of being possessed of; but in

those that relate to natural history (the doctor's favourite study) it more particularly abounded.

In 1800 his domestic happiness received a severe interruption from the death of his eldest son, Dr. John Lettson.

Mr. Charles Dilly, who died in 1807, an old friend of Dr. Lettson, left him a legacy of £500; and Dr. Anthony Fothergill, who died in 1813, thus expressed in his will his opinion of and regard for him:—"To Dr. Lettson, my silver medal of Capt. Cook; also, in consideration of his kindly undertaking to publish a collection of my essays, my gold stop-watch, and a cane with his own cipher, which he gave me, and which I have walked with many years, with grateful remembrance of the donor." After appropriating £1000 towards the expense of selecting and publishing his works, Dr. Fothergill



Fig. 51.—JOHN COAKLEY LETTSON, M.D.

adds, "I hope my worthy friend and learned physician Dr. Lettson will do it, with his wonted accuracy and discrimination." The benefits which Dr. Lettson was likely to derive from some still more considerable pecuniary bequests of Dr. Fothergill he did not live to enjoy, but he paid a just tribute of respect to the testator in an oration delivered at a meeting of the Medical Society.

Amongst the most remarkable public services that Dr. Lettson rendered his country were his contest with and complete conquest of the famous water doctor Mayersbach; the share he took in forming the general dispensary in Aldergate Street (the parent of so many other of those excellent institutions); his early attention to the Royal Humane Society; and his founding the Medical Society in Bolt Court; and the General Sea-Bathing Infirmary at Margate, planned wholly by himself.

With Dr. Lettson, and his friends Dr. Warner and Mr. Nichols, originated in 1786 the idea of erecting a statue in honour of Howard the philanthropist. The modesty of that excellent man checked the intentions of his friends at that time; but the idea was carried into effect after his death, and the monument was the first introduced into St. Paul's Cathedral.

In 1812 he associated himself with the Philosophical Society of London, of which he was soon after chosen the President. To this institution he was ardently attached.

Dr. Lettson's writings are very numerous, as well moral as medical, and all of them discover the philanthropist and physician. We select a few:—

"The Natural History of the Tea Tree, with Observations on the Medical Qualities of Tea and Effects of Tea-drinking."
 "The Naturalist's and Traveller's Companion, containing Instructions for Collecting and Preserving Objects of Natural History."
 "An Account of the Culture and Use of the Mangold Wurzel, or Root of Secreity. Translated from the French of the Abbé de Commerell; 1787."
 "Hints for Promoting a Bee Society. Two editions; 1796, 8vo."

NEPENTHES SANGUINEA.

DURING the recent visit of Her Majesty to the flower show at South Kensington it was observed that the Queen paid especial attention to the display of Pitcher-plants. These plants are so curious and beautiful in aspect and structure

that they never fail to command the close attention of every observer. Amongst the most rare and curious members of this tribe is the subject of our illustration, *Nepenthes sanguinea*, sketched from the unrivalled collection of Pitcher-plants in the *Nepenthes* house of Messrs. Veitch & Sons of Chelsea. *Nepenthes sanguinea* was introduced to this country by the firm just mentioned about twenty-two years ago through the instrumentality of Mr. Thomas Lobb, who dis-

covered it on Mount Ophir in the Malay Peninsula. It has always been a very rare plant, not so much from any real difficulty in its cultivation as from the length of time required for its propagation, owing to its slow growth and the hardness of its woody stems. Messrs. Veitch grow their plants belonging to this species in a damp house as near the glass as possible, and in a somewhat lower temperature than that in which *N. Rafflesiana* and other species are grown. The pitchers of

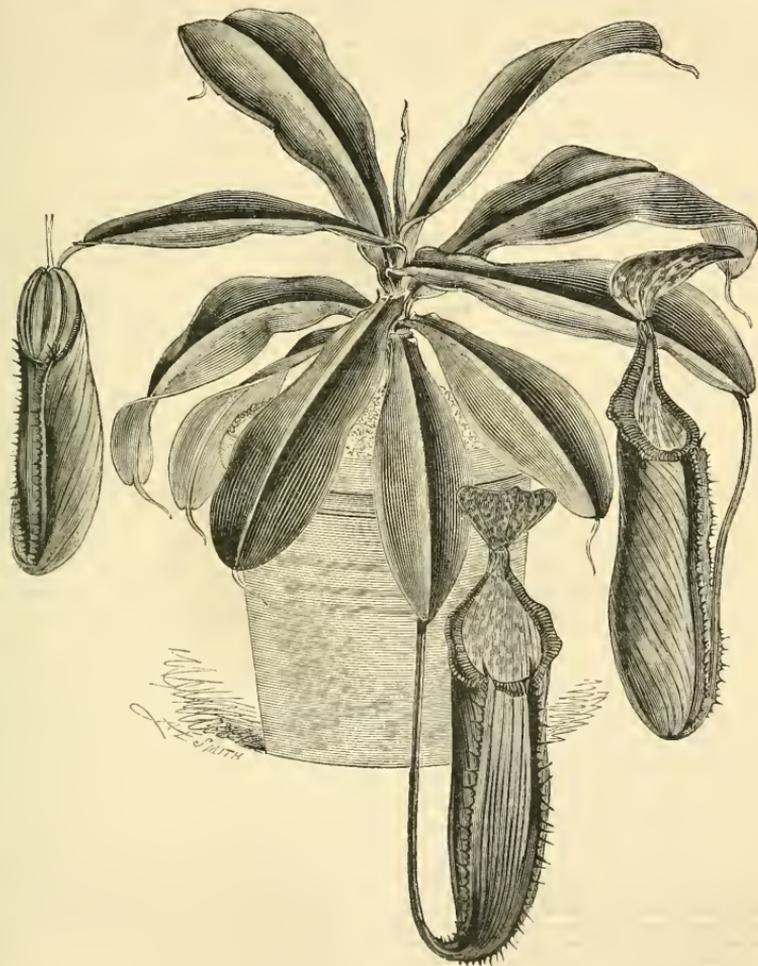


Fig. 62.—*NEPENTHES SANGUINEA*.

N. sanguinea are, as their name imports, blood red in colour, and they measure (exclusive of the lid) 9 inches or more in length. The lid itself and the interior of the pitcher are beautifully mottled and variegated, whilst the exterior is of a uniform and deep crimson colour. In a state of nature the seeds of *Nepenthes* at first float on the surface of the hot swamps of the Malay islands, Australia, the Seychelle islands, Madagascar, &c. When the seeds have imbibed a quantity of moisture they sink to the bottom of the swamps and there germinate.

A hot humid atmosphere and heat at the roots are necessary for the successful cultivation of these plants, which should be

grown in a compost of coarse fibrous peat mixed with a greater portion of *hypnum* moss.

EARLY PEACHES.

I AM now gathering some brilliant specimens of the Early Beatrice Peach of fair size and excellent flavour. Closely following are Early Louise, Early Rivers, and Hales' Early. The house in which these fruits are ripening was heated in the last week of December. I forget the day when the fire was first lighted, but it was after Christmas. For a few weeks the temperature of the house was kept from 45° to 50° Fahr., and

the average temperature during March and April has ranged between 60° and 70°. Owing to the absence of sun and the wet weather no excessive fluctuations of heat have occurred. As these Peaches become better known gardeners will, I think, appreciate their value.

In the same house with the same treatment the Royal George and Grossa Mignonne will not, I think, ripen for a month to come. My trees are in pots, and without conceit I may say they are a charming sight, covered with healthy and luxurious vegetation. The house in which the trees are grown is a small span-roof, 150 feet long by 15 feet wide, and contains 150 trees in pots all in fruit. I cannot help regretting that all the trees are not the four early sorts I have named. Next in order come Rivers' Early York and Condor, and I have found them the best two in succession for forcing. Lord Napier Nectarine ripens with Early York, and is an excellent forcing Nectarine, large, of good colour, and exquisite flavour.

The cold orchard houses present a refreshing contrast to the wall Peaches, which here look wretched with blistered and starved leaves, and an entire absence of fruit. I hope other districts are more fortunate. The orchard-house trees, on the contrary, are full of health and fruit. There can, I think, be hardly a question but that the climate north of London is much adverse to the Peach tree, which appears to require not only shelter for the flowers when expanded, but shelter for the wood during the winter, and a dry soil for the roots.—T. FRANCIS RIVERS.

PRETTY FLOWER BEDS.

THERE is no accounting for the difference of taste in flower gardening: some like high colours and strong contrasts, and some prefer harmony and rest, and employ retiring colours. The difficulty with the gardener is to meet and satisfy the love of novelty which is implanted in the mind. Many years ago I had a large flower garden to make gay, and had but few plants to do it with. Two beds, about 18 feet long and 5 feet wide, were planted all over with *Cerastium*, and ten plants of *Tropæolum* *Eclipse* were planted here and there amongst the *Cerastium*. I never saw such charming beds, never planted beds that give half so much satisfaction or pleased so many people. They were charming carpets without a pattern. The leaves of the *Tropæolum* were hidden and lost in the *Cerastium*, but its scarlet flowers just rose above and seemed to rest on the white *Cerastium* foliage. Fortunately the soil of the beds was poor, otherwise the *Tropæolum* plants would have run too much to leaf. The beds were really fascinating beyond description.—A. P.

APPLE CULTURE.

THE many articles—not one too many—on this subject are calculated to do much good, and we seem to be advancing to some certain and defined position. The amateur must in future receive trees from nurserymen true to name. This I place first, for how can we talk or write about trees unless we are sure of their names? Whatever the causes may have been, whether carelessness of the men, or trust to appearance of the trees, or error in labelling, the result is disastrous—a tree with a wrong name, no identification, no accurate knowledge. My plan is never to go to that nurseryman again who sends me any tree wrongly named. A minor grievance, but still a grievance, is receiving trees not ordered, but sent because the trees ordered were not in stock; the result is, that an amateur gets more trees ripening at one time than he requires, and his course of rotation is put out. It is better for the nurseryman to procure elsewhere the required variety; or I should even prefer waiting a year than have a tree not wanted. One writer has mentioned that he has always received trees true to name from Mr. Rivers. I can say the same in regard to Mr. Richard Smith of Worcester, and no doubt others can say the same for other nurserymen.

Now in order to attract greater attention to fruit culture I must make a suggestion which I should like to see carried out. The thought came into my mind when I this year received the beautifully illustrated catalogues of Messrs. Sutton and Carter, known as Sutton's "Amateur's Guide in Horticulture," and Carter's "Vade Mecum." The thought was this, Why should not our great fruit-growers do for Apples and Pears and other fruits what these seedsmen have done for flowers and vegetables? Take, for instance, the Worcester Pearmain; that is an Apple worthy of the draughtsmen and

the colourist. If the two great fruit-growers I have named would bring out such catalogues as I have referred to, with such admirable illustrations, some coloured and others plain, a great impetus would be given to practical pomology, for the eye being attracted by good form and fine colour, a desire to cultivate would arise, and accuracy of knowledge would come too, for buyers would know Apples by sight. The cultivation—I mean the intelligent cultivation of fruit trees with an eye to increasing for the market and for private use, the best looking, and the best keeping kind—is a subject which is very important. Apple trees are cheap, and landlords would do well to increase the value of their cottage property, and also keep good tenants, by planting their cottage gardens with useful and ornamental varieties of fruit trees, of Apples especially. This is an expense which in no case ought to be borne by the tenant.

Carefulness in packing fruit trees is also very necessary, but I have never had any reason to complain of the want of this. There is also a fault sometimes in the trees coming in too dry a state, as if some had been "lifted" for some days before sending off. Then let me observe as to planting—get in your trees at once, or if impossible, say they arrive on a Saturday afternoon, put them in "by the beels." Another cause of failure is that gardeners, and especially jobbing gardeners, will dig close to the roots and down among the roots of fruit trees, and cut off or wound the roots. So also among Raspberry canes. This is a great cause of mischief, for down pierce the remaining roots into some hungry subsoil. I have had this brought before me strongly of late, where wall-fruit trees have been thus injured, and new trees bought again and again. Now the cause is discovered and there is a good chance of a remedy.

It would, I fancy, be difficult to send trees from the nursery with such permanent labels as zinc, and they might wound the branches; but something better might be attempted than the mere slips of thin card, with the thinnest of string attaching them to the trees. Slips of parchment would be better and last longer, and very fine copper wire would be more durable than string. Still the new owner should at once, directly after planting, put on his zinc labels. With the name I add the time of ripening, thus—

NEW HAWTHORNDEN.

(Dec.—Feb.)

K.

This helps the memory, and will prevent confusion in the fruit room. The letters, D or K, dessert or kitchen, prevents a servant from wrongly using the fruit.

No doubt there is much excellent advice given by "C. M." as to only a few, and those the known best Apples, being cultivated; but there is in human nature a love of experiment, and also a love of old friends; so, luckily for both sellers of Apple trees and sellers of Roses, very many different sorts will be in constant demand. I own I am always experimenting in all sorts of things, and at the same time dearly love tried and proved old friends, whether they be Hawthornden and Irish Peach in Apples, or Bisirri No. 2 and William Griffiths among Roses. That certain Apples are very superior there can be no doubt, but very few are equally good in all climates and soils.

My situation is in North Wilts, and not above a dozen miles from Bath, as the crow flies less, hence a capital fruit climate. My soil is a good loam, with a not over heavy sandy clay subsoil. I mean a clay which readily in most parts breaks in the hand, and in a few years becomes, if brought to the surface, good enough garden soil. There is now a fine bloom on all my Apple pyramids of two-years planting, and some of one year; also most of the two-years-planted Pears, and a few of the last year's. As to the older trees, Plums if early are utterly ruined by bullfinches. Apples are promising and Pears fair. The Bullace which failed last year will retrieve his deserved good name this. Shropshire Damson, a fair bloom only. Strange to say the Kerry Pippin, finely grown, proved year after year an utter failure; once only in twenty years had I a decent crop, so this winter I cut it down. The bullfinches have utterly stripped the Medlars here. A sure bearing Apple with me, and hence reliable for kitchen purposes, is Lewis's Incomprable; and another, a large-grown and bearing tree, which comes in just after, called locally a Pomeroy, but most certainly not a true Pomeroy. I sent its fruit to be named by our Editors, but the reply was, "Not known." It is very general in this district. The Devonshire Quarrenden comes hard and flavourless; the Old Hawthornden magnificent in

size and good in every way. Keswick Codlin I destroyed; the tree was old, and there are better Apples at the date. Greasy Coat I knew in Cambridgeshire as a good Apple, and deserves its not very polite name. Mr. Abbley's article (page 323) on the subject of fruit culture is worthy of close attention, and places fairly before all the relative merits of orchard and garden fruit-growing, and standard and pyramid merits. The amateur must, I think, look to the latter for interest and amusement and the highest character of fruit. I own I think the pyramids very interesting. The eye is close to the bloom to observe its leant; the hand can readily form the tree; then the beauty of the fruit as to shape and colour is more prominently seen than in wall trees, or more particularly in standards. A well-grown, and coloured, and prettily shaped Pear never looks so well as when depending from the branches of a nicely formed pyramid. Let our nurserymen strive to bring out beautifully coloured and pleasingly shaped Apples and Pears, and issue illustrated catalogues of the same, and fruit culture will receive a great impetus.—WILTSHIRE RECTOR.

THE NATIONAL ROSE SOCIETY.

My good friend "WYLD SAVAGE," in his rather mournful lament over the Rose, seems to fear that we are not progressing as he would wish. I do not share his fears, although I could wish that more lovers of the Rose would join; but with a donation list of nearly £130 exclusive of £60 in cups, and with nearly two hundred members, I think we have made a very fair start. The announcement in last week's Journal that Mr. Newman will take the management of the Show (assisted, I hope, by Mr. John Mackenzie), will, I am sure, commend itself to your correspondent; as will also the fact I am now enabled to announce, that our excellent friend Canon Hole will preside at the dinner at St. James's Hall on the day. It promises to be, as he says, a good Rose year; and if all our friends would only exert themselves as some have done we should have a still more flourishing tale to tell.—D., Deal.

NOTES ON VILLA AND SUBURBAN GARDENING.

MAY has indeed been very fickle; for the most part the month has been cold and cheerless, but the rains which followed the protracted cold east winds have been highly beneficial to vegetation, and on ground that was not well stirred with the hoe during dry weather weeds have grown apace and must be promptly destroyed, for if they are allowed to remain such troublesome weeds as Chickweed not only speedily exhaust the soil but otherwise injure young seedling plants; encourage, therefore, the growth of all growing crops by forking and hoeing between them. The earliest-sown Cauliflowers, Cabbages, and Brussels Sprouts will shortly be large enough for planting-out. These are much better planted while young instead of being left in the seed beds to become drawn. (See all advanced crops, such as Onions, Carrots, Parsnips, &c. If Onions are likely to be short make another sowing; it will be useful for drawing young or for pickling. More Peas, Dwarf Kidney and Banner Beans can be sown. Draw the soil on each side, and place sticks to those crops sufficiently advanced. Radishes, Spinach, or other light crops may be sown between fruit bushes or between the rows of Peas. Small sowings of all kinds of salad should be repeated often. Lettuce with us answers best if sown in drills, thinning the plants out in time and allowing them to attain their full size where sown. By doing this they have not such a tendency to bolt as when they have been transplanted. Paris White Cos and its selected stocks—Kingsholm White Cos and Alexandra White Cos, are undoubtedly the best for summer use, and "heart" without much trouble of tying them up. Lettuce which have stood the winter are now turning in, and the Cos varieties may be assisted to blanch by tying them with a small piece of matting.

Frames and pits where bedding plants have been protected during the winter and spring months should now be turned to account for growing late crops of Melons and Cucumbers. They will require less heating material now than in the early spring months; still a good quantity of well prepared dung is a desideratum. Let the dung be thrown in evenly and worked about with a fork. Allow it to settle, and place some good soil raised in the centre of each light. Melons require much heavier soil than Cucumbers. Shade slightly when first planted, yet insure the plants to the light and sun. When established give plenty of air and water during hot weather, and close the frames about 4 or 5 P.M., and open them in the morning as early as the weather permits. Do not let the plants ramble wildly, but keep them within bounds by regulating the branches and stopping the joints. Telegraph is a good Cucumber for all purposes, and of Melons Victory of Bath and Munro's Little Heath are both comparatively hardy, and are useful sorts.

As soon as spring bedding plants are past their best remove them. All such that are increased by division of the roots should be divided and planted in suitable positions in a shaded border. Daisies, Forget-me-nots, Pansies, Polyanthus, and Primrose are all increased in this way. Wallflowers are raised from seed, which should be sown thinly at the present time, the seedlings to be afterwards transplanted in order to keep them dwarf and sturdy. The planting-out of summer bedding plants may now be proceeded with; although the weather is very cold, yet there is an absence of frost, and warmer days may be expected. One of the principal objects to be kept in view is never to plant when the soil in the pots is dust-dry, for if planted in that state no amount of rain, or watering given to the flower beds will render the growth of the plants satisfactory. See, therefore, that the soil in the pots is in a healthily moist condition before planting.

Some of the more select bedding plants—such as *Coleuses*, *Calceolarias*, *Geraniums*, *Petunias*, and *Lobelias*—if not required for bedding can be potted for furnishing the greenhouse during the summer months. Any spring-struck *Geraniums* should be treated in the same manner, and they will bloom well during the autumn.

Roses are now beginning to grow, and it is necessary to repeat that worms in the buds must be sharply looked for; we have plenty of them, and it is only by keeping a sharp look-out among them always in request, and should be grown in every garden. Mint, Thyme, Sage, Tarragon, Winter and Summer Savory, Pot and Sweet Marjoram, Basil, Fennel, Borage, and Balm are among the most in request. Sage, Mint, and Thyme are no doubt more used than any others. Sage is readily increased by cuttings and seeds. Mint requires transplanting every two or three years. Thymes, of which there are two or three sorts, is best procured from seeds sown at the present time, it may be also increased by division. Tarragon, like Mint, is improved by being divided and occasionally transplanted, it will also require protection from slugs when coming through the ground. Basil, Borage, and Sweet Marjoram may be sown in the open ground when required; the seed can be sown directly. As the summer advances all kinds of herbs can be cut and dried in order to preserve a supply during the winter months.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

A FAVOURABLE change has taken place in the weather, the cold, keen, east winds having been succeeded by refreshing showers. An excellent opportunity has thus been afforded for planting out all crops of vegetables and salads which were waiting, and for filling up spaces where plants had died or been eaten off by marauders. We should have again run the hoe through the soil amongst many crops and also the fruit-tree borders to kill incipient weeds, but all our available force was wanted in the flower garden. However, those who have a large kitchen garden to manage will now be very busy in getting everything in a forward state. Two sowings of Peas at least ought to be made this month. During the first week in the month we sowed Standard, Dr. Hogg, Dr. McLean, Veitch's Perfection, and G. F. Wilson, which may be termed a good selection of Perfection. It is neither necessary nor is it desirable to sow a very large number of different varieties of Peas, but it is well to sow good early and good late sorts together, so that when the early varieties are about over the late sorts will be coming in. Celery ought not to be neglected at this season. Those who sow in frames must be careful not to subject the plants to sudden changes. Such weather as the present is a good time to tie the plants out in the open air if this has not already been done.

HARDY FRUIT GARDEN.

The anxious cultivator will pay frequent visits to his wall trees this month, and where fruit has suffered from frosts the effect is now apparent. Apricots which were set before the severe frosts occurred and have been protected since are now safe, and the fruit must be thinned out where necessary. It is bad policy to allow the fruit to swell to a considerable size and then remove it. As soon as it can be seen that the fruit is set very nearly all that is not wanted should be removed, leaving a small margin in case of accidents. Peaches and Nectarines flower later and do not require to be thinned out so soon as Apricots; but the trees are subject to the attacks of aphid, which the Apricot is not, and if any leaves are curled it is a sure sign of the presence of this pest. The insects ought to be destroyed before the leaves are much curled, as when they are in that state the water does not reach them. Syringing three or four times with soapy water will destroy the insects if they are taken in an early stage, but one does sometimes see trees so much neglected that half or three parts of the leaves are curled. When this is the case it is almost impossible to reach the insects by syringing. The trees may be fumigated if coverings are nailed close to the top of the wall and are allowed to hang over

the trees to the ground. If the apparatus used to fumigate is placed under the covering during a calm night the smoke hangs about the trees for a very long time. Had spider does not usually attack the leaves until the hot weather sets-in in June. The best way to keep this pest in check is to syringe freely about 5 or 6 P.M. on every hot dry day. A good garden engine is the best for this purpose, as it throws the water with more force than a syringe does.

PINE HOUSES.

A few Cayennes and Queens are ripening-off in the earliest fruiting house. The temperature is still 70° at night, but it is not necessary to maintain so high a temperature as this, and perhaps the flavour of the fruit is better if the minimum range is 5° lower. A steady bottom heat of 85° or 90° is very essential to success, and with the modern appliances of hot-water pipes this can easily be managed. Our plan is to plunge the pots in a shallow bed of spent tan from a foot to 1½ inches deep, and under which there is a range of 3-inch hot-water pipes. We find it answers best to raise and maintain the heat in the bed principally from the pipes. The best material to plunge the pots in is tan, and our beds are seldom turned over unless at the time of repotting, when the extra amount of bottom heat caused by this operation promotes a more speedy ripening. We have not shaded any of the plants as yet, and would rather not do so, but it is sometimes desirable to place a slight covering of tiffany over the fruiting plants to prevent scalding of the fruit. On one occasion we were anxious to accelerate the ripening of some Smooth-leaved Cayennes, and kept-up a high temperature as well as allowed the full force of the sun's rays upon them, and the result was that the fruit was injured and decay set in before it was fully colored. Any plants which have not started into fruit with the others, and which do not yet show signs of doing so, ought not to be allowed to remain in the same pots. The quickest way to dispose of them is to cut the plant off close to the surface of the soil, remove about six of the under leaves and then repot in fresh soil, using 9 or 10-inch pots according to the strength of the plants; plunge the pots in a bottom heat of about 100°, and fresh roots will speedily be formed. Indeed, it will be seen that there are a number of roots ready to start into active growth close to the stem of the plants at the time it is cut off. We have also tried the plan of shaking nearly all the soil from the roots of the plants and repotting again with nearly the whole of them attached, but this plan does not answer so well as boldly cutting the plants off. The fruit ought not to be allowed to remain on the plants in a very warm house until they are quite ripe. Perhaps the best plan is to remove the plants with the fruit on them to a better ventilated and cooler place. We find the fruit keeps from two to four weeks if it is removed from the plant and placed in a room where it is not exposed to a too free circulation of air; or the whole plant may be placed in the fruit-room with the fruit upon it. Queens intended to fruit very early next year should now be placed in their fruiting pots. A batch of our own will be potted as soon as we can find room for the plants. At present the house is full of plants with fruit in various stages of ripeness, and it is to be much injured. We shall pot them in 10 and 11-inch pots, using good turfy loam, crushed bones, a little decayed manure, and a few lumps of charcoal in each pot.

PLANT STOVE AND ORCHID HOUSES.

We have been potting on cuttings of plants which were struck early in the year, such as *Bonardias*, *Thyrsacanthus rutianus*, and all other free-growing subjects that it is best to propagate annually. To grow these plants well they ought to be carefully attended to, and be placed where they are pretty freely exposed to light and air, but not to be in the full blaze of a scorching sun. One very often sees such plants placed in a position under larger specimens, and very much neglected in other respects, so that good plants can never be formed; but it is certain that if space and time cannot be afforded for them it is better not to cultivate such plants at all. There are so many new plants being introduced, and people are anxious to obtain what is good amongst them even if their houses are already fully stocked, that every plant cannot have justice done to it under such circumstances, consequently the weakest goes to the wall. Stove plants never ought to be crowded together, as the growths are not only weakened but they also become a prey to insect pests. There are some stove plants of recent introduction, especially "foliage" plants, that cannot be said to be acquisitions, and it would perhaps have been as well if they had not been introduced from their native wilds, as for the time at least they usurp a place that ought to be occupied with better, though perhaps older, plants. All flowering plants, such as *Stephanotis floribunda*, *Clorodendron Balfourii*, *Bougainvillea glabra*, *Ixoras*, *Allsmandas*, &c., require considerable attention to keep them clean, and those of a climbing habit ought to have the growing shoots trained into position before they become entangled with each other.

Orchids in many instances have started into growth, and this

must be encouraged if root-action has also commenced by repotting the plants if necessary. Orchids are very frequently overpotted, and if specimen plants are in good health it is just as well not to shift into other pots until those in which they are growing are pretty well filled with roots. As a general rule specimen plants of *Cattleya*, *Lælia*, *Dendrobium*, *Lycaste*, &c., are potted once in two years. If a plant shows signs of diminished vigour or becomes otherwise unhealthy it is the best plan to repot it when the roots start into growth, even if it has been repotted within a less period than just named. The compost may not be suitable, and the roots have thereby suffered injury; in that case it is best to clear off the old soil and repot in fresh material in a smaller pot.

FLOWER GARDEN.

We have been very busy during the last week putting out the bedding plants. It is a great advantage to be able to get them out during a dull period and when the ground is pretty moist. When it is necessary to plant out during hot dry weather the water-pot has to be brought into requisition, sometimes before seed always after the plants are planted, entailing a vast amount of extra labour with less satisfactory results. The plants ought to be potted carefully. The object of some is to plant as many as possible in a plant case, but it is well to see that they are sufficiently firm and planted at a uniform depth. We plant the roots in the ground rather deeper than they were growing previously in the pots or boxes. A very large proportion of our plants this year were in boxes, and when the plants are planted in dull weather they do not suffer from the effects of removal. — J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

Messrs. F. & A. Smith, The Nurseries, Park Road, Dulwich, London, S.E.—*Catalogue of Stove, Greenhouse, and Bedding Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

ADDRESS (Major M.).—Your letter has been forwarded.

CATS AND NEMOPHILA (R. J. H.).—We have received similar complaints from other growers of cats destroying *Nemophila*. We do not think that any dressing of the seeds as you suggest would save the plants from injury.

JERSEY POTATOES (H. C., South Hants).—Many, including the ripest of these you refer to, are grown in France and turf pits for supplying the markets early in the season.

FERNERY IMPERFECT (C. W., *Elstree*).—The pockets for Ferns—composed of cinders and cemented to the wall, and which break off when touched—can only be remedied by using stronger cement from a newly opened cask. The cement you have used we think had been too long exposed to the air, and was what builders term "dead."

SEEDLING PANS (*Heartsease*).—The orange colour is extremely rich. The flower was much crushed in transit, which prevents our judging as to its form, but we think the variety worthy of being preserved.

PIACILLAS (E. B.).—They are hardy plants, flourishing in ordinary garden soil. There are several species, some being annual and others perennial. Probably Mr. Ware, Hale Farm Nurseries, Tottenham, or Mr. Parker, Exotic Nurseries, Tooting, could assist you in obtaining what you require.

HARD WATER (E. O.).—The Catherham water being impregnated with calcareous salts, owing to its coming through the chalk stratum, is not good for watering plants, and the exposure in an open tank before applying it to them, would cause much of the calcareous salts to subside. How much waters differ is told by chemical analysis, but we will only quote three instances:—The Thames water is about ten times, and Trent water nearly twenty-six times harder than Don water.

INSECT ON ROSES (T. W. S.). It is *Otiorynchus notatus*. Are there not some roses near you to which it may be taken? It is a fit tree species. No remedy as yet against it has been discovered.

EXHIBITING AND WATERING ROSES (A *Would-be Exhibitor*).—A tree means the shoot as cut off from the Rose, and may have two or three blooms on it. Single blooms are simply what the term implies. I would certainly not water as you propose at mid-day. If it cannot be done at a better time it had better be left alone, but you choose dull days for watering? After the buds inserted last year have started they are apt to be blown out by high winds, and so should be tied up to prevent it.—D. Deal.

CARPET BEDDING (Old Reader).—A book containing designs for carpet bedding and modes of planting them will, we believe, shortly be published. You will find many designs if you refer to the back numbers of this Journal.

HYDRANGEAS NOT FLOWERING (*Idem*).—The variegated *Hydrangea* flowers when they quite as freely as the green ones; it is impossible for us to tell why your plants have not flowered without knowing something of their state and the conditions under which they are growing—or dying.

DESIGN FOR FLOWER GARDEN (A Reader).—The design is suitable for the ground. We doubt if the mixed *Gedeties* will be satisfactory, and should prefer the two circular beds being alike. *Convolvulus minor* is a good bedding annual, but not a day must be lost in sowing the seed, or the plants will be late in flowering. *Pile Drummondii* is in some districts and during some seasons uncertain. As the central bed is large we should plant *Stocks* and *Asters* about 18 inches apart with the *Pilex*; you would then be the more certain of a display over a long period, as well as have greater variety. The

Sticks might be planted much more thickly, as you say you have "any quantity" of plants, so that you could weed out the singles without causing unsightly blanks. Some of the doubles you could also draw out if you perceived them interfering with the Phloxes. The *Asters* will continue flowering after the *Sticks* have faded. The *Geraniums* are correctly arranged. The *Rhododendrons* should mix with the *Convolvulus* for the plants of the former being already established would flower some time before the latter, the seed of which we presume is not yet sown.

PLANTS FOR BACK WALL OF VINEY AND GREENHOUSE (Paddle).—You do not say whether the viney and greenhouse are combined or whether you have two structures. If one house, plant *Camellias* and afford (temporarily) shade in summer until the Vine has covered the top of the house; or you may defer the planting of the *Camellias* until the *Vines* cover the roof, having *Tomatoes* against the wall, or *Cucumbers* grown in pots would do fairly in the summer. If two structures we should plant the *Viney* with *Camellias*, and the *Greenhouse* with *Camellias*, *Lucasia gratissima*, *Thalictrothamnus fascicularis* or its better form *H. Newellii*, and *Lapageria rosea*.

MULCHING STRAWBERRIES (Idem).—The surface must not be interfered with so as to disturb the roots, and after rain or a good watering the mulch you propose of short dung may be given, but you will need to place some fresh material over it to keep the fruit clean. We know of nothing better than decayed straw, though ordinary straw answers long after cover well.

PROTECTION FOR OUTSIDE VINE BORDER (F. F. D.).—The border being well drained, and consequently more considered than appearance, we should not trouble about protecting the border with anything besides the stable litter of which you have plenty, not putting it on so thickly as to heat, but using the most littery portions only, 9-inch to 12-inch thickness of which is ample. Beside the water-proof canvas coverings are necessary to keep the borders dry when late Grapes are hanging. Such coverings are useful for other borders in maintaining a higher temperature of the soil and preventing its becoming sodden; but only a few instances are shutters, &c., indispensable.

BONES FOR VINE BORDER (A. H.).—Your border being 25 feet by 10 feet and 2 feet deep and it ought not to be less) will require about 25 cubic feet of compost which with bones added at the rate of one part to five would require forty-eight bushels of half-inch bones; but bones, like lime, having a tendency to descend, we should only use half the quantity in making the border, and apply the remainder to the surface after the *Vines* come into bearing. This will be at the rate of one part bones to twenty of soil.

SANDY GARDEN PATHS (S. T.).—Gravel not being procurable and expense an objection to your advising asphalt. We are of course of the opinion that you do not except taking equal quantities of ashes from boiler furnaces and old mortar rubbish, mixing well together, sitting through a three-quarter-inch sieve, placing half an inch upon the paths in wet weather, and rolling well down. The paths would not only be improved for walking upon in moist weather, but the sand of which you complain would be prevented blowing in dry weather.

CUCUMBER PLANTS UNHEALTHY (Regular Reader).—The leaf sent presents no appearance of having been infested with insects, or to have suffered from any fungoid attack. It appears to have been slightly scalded, a result of the long-continued bad weather being followed by bright sun. A slight shade for a few days, accompanied by more frequent sprinklings during sunny days, would probably save the foliage. Admit air more freely, yet avoiding cold draughts.

PLANTS FOR ROCKWORK IN PARTIAL SHADE (S. M.).—Under the drip of the trees we should have hardy Ferns, of which we name a few:—*Blechnum Spicatum*, *B. Spicatum imbricatum*, *Laetia dilatata*, *L. dilatata cristata*, *L. Filix-mas*, *L. Filix-mas imbricata*, *Athyrium Filix-foemina*, *A. Filix foemina* var. *plumosum*, *rumicatum*, *cyathiferum*, *spinosum*, *crissatum*, and *Georgium plumosum pictum*; *Polypodium vulgare* and var. *cambrianum*; *Polypodium Dryopteris*, *P. Phegopteris*, *Polystichum scutellatum*, *F. angulare* and var. *crissatum* and profferium, with its sub-var. *Willottianum*; *Scolopendrium vulgare* and var. *obovatum*, *crissatum*, *puberulum*, and *curvatum*. The plants in the base in damp ground you may plant *Osmunda regalis* and *Oncoclea sensibilis*. Plants for the less shaded parts may be *Adonis vernalis*, *Ajuga orientalis*, *Anemone hepatica*, *A. nemorosa* and var. *pleas*, *A. ranunculoides*, *Arabis alba*, *A. bibracteata*, *Arabis detroides*, *Coronilla majalis*, *C. Polyostium*, *Cyclamen coum*, *C. europaeum*, *C. hederifolium*, *Helleborus niger*, *Hepatica anemone*, *H. trilobata* var. *Hypericum nummularium*, *Meconopsis cambrica*, *Myosotis distictiflora*, *M. sylvatica*, *Omopodolus vera*, *Primula scailas* var., *Polygonaria officinalis*, *Saxifraga umbrosa*, *S. umbrosa elegantissima*, *Trollius europaeus*, and *Viola cucullata*.

PLANTS FOR GREENHOUSE (Idem).—*Ascia armata*, *A. Riciana*, *Camellia japonica*, *Camellia cordata*, *Camellia japonica*, *Camellia japonica*, *Correa Brilliant*, *Ortisia racemosa elegans*, *Kalocotyle coccinea superba*, *Libonia floribunda*, *Pimelea decussata*, *Polygala Dahmiana*, *Rhododendron jasminiflorum*, *Rhycochloperum jasminoides*, *Statis profusa*, and *Silene purpurea*. We presume you have *Pelargonium*, *Fuchsia*, *Cyclamen persicum* var., *Cineraria*, *Colocasia*, and *Primulas*. *Azaleas* will succeed in a house from which frost is excluded.

NAMES OF PLANTS (Emily Oldham).—It is *Apongeton distachyon*, a native of the Cape of Good Hope, and it has no doubt been planted in the pond you refer to. (*Somereth*).—2, *Cactus Akermanni*; 3, *Peperaw nudicaulis*; 4, *Saxifraga saxatilis*; 5, *Arabis alba*; 6, *Erodium moschatum*. (*H. M. B.*)—1, *Scabiosa grandiflora*, but the leaf sent is imperfect; 2, *Veronica Blue Gem*; 3, *Polemonium coeruleum variegatum*; 4, *Sedum azideum variegatum*. (*G. O. S.*)—*Epidemium mesanthum*. (*A. H. S.*)—1, *Stenblossum eburnea*; 2, *Dendrobium Benouze*; 3, *Epidemium aromaticum*; 4, *Gongora maculata*.

by the roadside, and we wonder it had never been picked up before by some passer-by.

In a wood in Wiltshire last year a pair of Golden Orioles were seen several times. We hear that the female bird was seen again yesterday. In the same county too, near Savernake, a fine male specimen of the Hoopoe was shot a week or two back, and is being set-up in Devizes.

It is with much regret that we hear the Royal Counties Association do not intend to hold their meeting this year. We have followed them from Windsor to Southampton, from thence to Reading, from Reading to Portsmouth, from there to Abingdon; and now this season we had once more hoped to meet Mr. Downs and his associates at Southampton, but the outbreak of the cattle plague has frightened them, and the Show is postponed for another year.

Mr. Kitchen has resigned the secretaryship of the Leghorn Club, and his place has been filled by Mr. Bradbury. The Club has been very energetic, and certainly the breed has gained in popularity. We hope the cloak of Mr. Kitchen with his untiring zeal will fall on the new Secretary.

We are told that the breed of fowls called Andalusians did not come from Spain, but from the island of Santa Lucia, lying between Honduras and England. We know, however, of a lady who imported from Malta some eggs which were laid by some common fowls in that island, which when they hatched they proved to be extremely good Andalusians. Santa Lucians, their great supporter in England says, they should have been termed, but the word was corrupted into Andalusians from the similar sound in pronunciation.

We are very sorry to announce that the prize money at the late Bournemouth Poultry Show has not been paid. The Show was held in the first week of March, and we are now very near to the corresponding week in June. We hear that the Secretary does not reply to any letters or applications for payment, and further learn that several winning exhibitors have amalgamated to prosecute.

Most probably all fanciers have at times experienced the annoyance of finding some valuable egg cracked when it was required for incubation. We are told that such cracks can be mended by painting them with cosaline cement and then applying some plaster of Paris. We have tried the edgings off a sheet of stamps, but never found this satisfactory; the other remedy has, however, we learn by a contemporary, been used with success.

In many places eggs continue very scarce and dear. We know of a town about thirty miles from London where cooking eggs are only five for 6d., and fresh eggs even now 1s. 3d. a dozen. On the other hand, in Wiltshire and Dorsetshire we have within the past few days bought fine newly laid eggs at 1s. a score. The importation of eggs into England continues on a great scale. At Littlehampton alone within one week two vessels brought in three million of eggs. A friend of ours the other day bought half a dozen of French-imported eggs and put them under a hen, and hatched five out of the half dozen; they consequently cannot be very stale when they are dispatched. When writing on a gentleman in Scotland I may state that a hen belonging to a gentleman in Scotland laid a "pair of eggs" a few days ago. They were attached to each other by a small cord of some skinky substance about an inch in length. In other respects the eggs were perfect. A chemist in France has lately tested the comparative value between a Duck's egg and a hen's. The results showed that the eggs of the Duck are much the richest, and also further experiments and calculations proved that the Ducks were the most prolific layers. We often when selling large eggs or buying small ones look forward to the time when eggs may be hatched with weight. Many of the hens in our farmyards at the present day have so much degenerated that not only are they bad layers, but their eggs are not of the size of a Bantam, while the fowls' appetites remain as hearty as ever.

It is suggested by some influential Pigeon fanciers that committees in framing new schedules should form classes for Owl hens, which have as a rule but a poor chance of success against cocks, and also that there should be classes for Peak and Shell-gang.—*Am. Pigeon*.—*Coek*.—1, A. Nelson. 2, A. Fattison. 3, G. Carter. *Hen*.—1, J. A. Nelson. 2, W. Youngusband. 3, W. Tillotson. *Black-breasted*

POULTRY, BEE, AND PIGEON CHRONICLE.

BEDLINGTON POULTRY SHOW.

POULTRY AND BIRD NEWS.

We hear of birds nesting in peculiar places. We have found a nest in an inverted flower pot, and in which year we had a Wren which flew in through a cellar window which was generally open, and built and laid among some wine bottles, and now we hear of two ladies in Staffordshire finding a Robin's nest with seven young birds in an old shoe. The shoe was lying

The thirteenth annual Exhibition of this Society was held at Bedlington on the 21st and 22nd inst., when the following prizes were awarded:—

POULTRY.—DORRINGS.—1, W. Swann. 2, M. S. Buxton. 3, J. T. Froud. *Cochins*.—*Duff or Cinnamon*.—1, 2, and 3, G. Proctor. *Brames*.—*Dark*.—1, J. Anderson. 2, S. Teasdale. 3, M. Masterman. *SPANISH*.—1, T. Newlands. 2, T. & R. Miller. 3, R. Shield. *POLISH*.—1, H. A. Clark. 2, J. T. Froud. 3, R. Farne. *BARS-ROCK*.—1, G. Robinson. 2, J. A. Nelson. 3, M. A. Abingdon. *GANG*.—*Duff variety*.—*Coek*.—1, A. Nelson. 2, A. Fattison. 3, G. Carter. *Hen*.—1, J. A. Nelson. 2, W. Youngusband. 3, W. Tillotson. *Black-breasted*

You say the last deaths have taken place in the identical breeding cage in which others have previously died. We advise you not to place any more birds in the cage until it has undergone a thorough scrubbing with hot soap and soda suds, and afterwards scalded with hot water.

If No. 1 packet of seed be of the same kind as that used all the winter upon which the birds fed and were kept in such good health, it is natural to conclude that the cause of the deaths must not be attributed to the seed, unless some of that seed became impregnated with the acid used for cleaning the breeding cage.—Geo. J. BARNESBY.

CRUDE AND PERFECT HONEY.

Mr. PETTIGREW, in reply to my letter concerning the manner and place in which bees discharge their burdens of honey when returning from the field, has endorsed my remarks upon that subject, and to my mind contradicted his previous statements. He cannot but see a discrepancy in the following passages quoted from his letters of March 22nd and April 26th respectively. It had been stated by "RENFREWSHIRE BEE-KEEPER" that bees carry the nectar from the flowers right up, without any intermediate resting place, to the super or uppermost portion of the combs, and hurry off for more. This is all I sought to prove in my former letter. Now for Mr. Pettigrew's own words in reply to "RENFREWSHIRE BEE-KEEPER" written at the former date. "This is not correct, for bees in returning from the fields first drop their pollen and honey in the cells in the centre of their hives, sometimes in queen cells, and afterwards convert it into honey, carry it aloft, and there store it up." What does he say at the later date in reply to my letter? "Whether the crude honey goes into nadirs or supers by the front or side entrances it is afterwards converted by the bees into honey proper." In the first statement Mr. Pettigrew distinctly says that the honey is not carried direct to supers, in the second he allows that this is the case. As to the theory of the conversion of crude honey into "honey proper," my remarks were neither *pro* nor *contra*. I have so far read nothing to prove this theory, nor do I believe that anyone has collected sufficient data whereby to disprove it. "B. & W." has pointed out some discrepancies in the reproduction of "A Paper read before the Missouri Valley Association," which doubtless many readers besides myself had noticed, and I quite agree with him that "all these matters have to be carefully investigated before we can form any definite conclusion as to the making of honey by bees."

Mr. Pettigrew asks, "Were the supers of 'P. H. P.' without pollen in their cells?" Excepting in perhaps a dozen cells at the base of the Lee's super, where the bees had connected the comb of the super with those of the stock hive, there was not a vestige of pollen in the seven supers. Mr. Pettigrew asks, "What did the bees do with their pollen?" They carried what pollen was gathered during the copious flow of honey into the stock hive. It was a rare occurrence to see a pollen-laden bee pass through the super entrances. There was a glut of honey when these supers were being filled. By far the greater number of the workers brought home honey, and nothing but honey, for many days. Do bees indiscriminately fill up their cells with pollen and honey? Cannot white comb filled with pure honey be cut from the outer parts of skeps after a bountiful harvest? Mr. Pettigrew has often said they can, and I can in this matter endorse his statement. I could show him bar frame hives now with four or five frames at the ends of each, filled with the purest virgin comb and honey. Of these I daily unseal portions, and hope soon to see them disfigured (?) with brood and pollen. I make these statements to show that bees do not indiscriminately fill their combs with honey and pollen, and so to my great advantage they stored honey, not honey and pollen, in my supers. Had I followed Mr. Pettigrew's advice in this case and allowed no bees to enter these supers excepting through the hive, I should have had few supers filled. The heat and confusion engendered by thousands of bees attempting to crowd backwards and forwards through a 3-inch hole at the top of a straw skep must have rendered swarming a constant occurrence.

In this case, and thus is added another thread to the already strong cord which binds up the straw skep down and place the bar-frame hive on the floorboards. Is there not always danger of the queen mounting into supers and spoiling them when a free entrance is offered her, as in the case of a hole in the crown of a skep? So arrange perforated zinc wires, slits in a board, that only workers can pass through, then so few bees can enter the super at the time that in sultry weather they must either be idle or swarm. On the other hand, give the bees a roomy bar-frame hive, and when ripe for supering a sheet of zinc with 5-24ths-of-an-inch perforations, covering the whole of the top of the hive, and they have such free ingress and egress to and from the super that the chances of swarming are reduced to a minimum, and should bees attempt to enter with pollen it rubbed from their legs, while drones and queen are shut out. Therefore I say that in the case in question I was right in my

management. Supers over bar-frame hives were very differently arranged. Mr. Pettigrew entirely ignores the point which my last letter brought to his notice. The introduction or non-introduction of pollen into supers was not the bone of contention. This I consider a "quibble," but he calls it "an important question in the discussion."—F. H. F.

THE STEWARTON HIVE.

A LADY CORRESPONDENT ("E. H.") writes that she has "just obtained a Stewarton hive from Mr. James Allen, whose name was given in your Journal. I am rather at a loss how to manage it in some points and shall be glad of any hints. The bars are some of them screwed down and some nailed fast, two on each side. I am puzzled to know of the best either to put comb in or to examine them at any time? Are there any directions published for the management of the Stewarton hive?"

As doubtless some of your readers will, like this correspondent, find considerable difficulty in understanding the working of the Stewarton hive at first, I shall here notice the construction of the hive and the way in which it is managed by the "RENFREWSHIRE BEE-KEEPER." The hive itself as it comes from Stewarton appears to the eyes of those unacquainted with it to be a very incomplete instrument, curious and difficult to understand. There are three breeding boxes 6 inches deep each, and two honey boxes 4 inches deep. All these put together constitute the hive. All the boxes have cross bars at their tops. Though octagonal in shape, the reader will form a pretty accurate idea of the appearance of a Stewarton hive if he pile up a lot of riddle rims, 14 inches wide, one on the other, till they are 30 inches high. Having neither crown nor floor board it does appear very incomplete, but really it is not so, although a floor and a flight board must be found for it. A bundle of slides and pegs are furnished and sent with every hive, which, properly used, make the Stewarton complete and workable. The slides run in grooves and fill the spaces between the bars. Its size is doubtless its best property and greatest recommendation, for a hive of any shape containing between 4000 and 5000 cubic inches of space is capable of doing much work. Its next best property is this, that it can easily be enlarged by either nadirs or supers: indeed the principle of the Stewarton hive is its capability of enlargement at both top and bottom. What the common bar-frame hive lacks in this particular the Stewarton possesses, and this gives it a very great advantage over the former. The price of the hive at Stewarton is, I have been told, 25s. and 27s. each, and the carriage to Manchester is 3s. per hive. A floor-board here costs about 2s., so that a Stewarton complete costs about 30s. A friend of mine asked Mr. Allen to make one for him 16 inches wide, for which he paid 5s. extra.

A Stewarton hive can easily be copied by any carpenter; indeed cottagers may have cheap hives to be managed on the Stewarton principle by making them from empty grocers' boxes. By knocking their bottoms out and fitting cross bars in them after the manner of the Stewarton, hives of equal capacity and power may be made for 1s. or 2s. each. Any handy bee-keeper may easily make square Stewartons from cheap boxes, and if he can buy riddle rims as we can in Manchester at 6s. per dozen he may make round Stewartons too. These things are mentioned here in the interest of working people.

I now come to notice the mode of managing the Stewarton which is practised and recommended by the "RENFREWSHIRE BEE-KEEPER," who is a very high authority and an able manager of the Stewarton system. In this Journal and elsewhere he has explained pretty fully the improvements he has made in the construction of the Stewarton and how he works the hive. I will quote his explanation from Mr. Hunter's work, page 59.

"The general mode of manipulating the Stewarton hive is to lash a couple of the breeding boxes together with cords. After the bars of the boxes have been duly furnished with comb or embossed wax sheet, run in the sliding door of the upper and withdraw all the slides of the lower compartments, then close the openings with the little pegs accompanying the boxes, thus giving free communication between the two boxes and making them one to all intents and purposes. The bees may then be introduced—a prime swarm of course. Some eight or ten days thereafter a second prime swarm, if procurable, is hived in the third breeding box and at once set down close to the earlier one, and at dusk the last-named or first swarm in the two boxes is placed on it. The lower of the two first boxes, now the central one, has its door run or closed, and the slides of the lowest are removed and the pegs put in as before. Should the evening prove chilly a whiff of smoke may be administered to both.

"The morning light reveals usually nothing but the surplus queen dead on the floorboard. The lowest box is then removed and the entrance to the second again opened. Should any bees be clustering in the lowest, the removal of it can be postponed till the middle of the following day, when many workers will be abroad. The object of removing the third box is to restrict space, so that the combined efforts may all the sooner complete comb-building below and be thankful to press up into the

super which has been placed thereon, fitted with guide combs. Communication between stock and super is afforded by withdrawing the outer slide only on either side. Should the weather be favourable and honey abound the bees take to it at once; if not it is better to run in the slides again and wait for a day or two, then make a fresh trial, as it is a curious fact that bees often will swarm rather than accept a super open to them which they have previously rejected. A few days after the bees have taken possession white comb appears at the windows; then, and not till then, the third breeding-box is placed as a nadir underneath all, its slides withdrawn and pegged as at the union, and the doorway to the central box closed once more.

"The colony may now be said to be fairly under weigh, and should favourable honey-gathering weather continue a second honey box may be placed on the first, and all the slides of the first super withdrawn. To induce the bees all the more readily to take to the supers I have found it a considerable advantage to run a slip of gummed paper round the junctures. If the super be taken to, or if honey be plentiful, a second slide on either side of the top box may be withdrawn, at first either partially or wholly. This is a nice operation dependant on the flow of honey, and the bee-master must exercise his discretion, so as, if possible, to prevent the incursions of the queen into the super. The plan of admitting only the honey-gatherers of the [at] the ends of the combs to the super to the exclusion of the queen, nurses and pollen-collectors of the centre, is a most valuable feature of the Stewarton hive. A third and other super may be still called for, putting the additional super accommodation always uppermost; and in exceptional cases even additional breeding space by nading at the bottom may be requisite, although a strong colony was lately worked with but 18 inches [deep] of breeding space while filling seven honey boxes in various stages of progress. To get bees to take to the supers at first and to work them steadily through the vicissitudes of temperature it is indispensable to cover and wrap them well up with some warm woollen stuff. I generally use old crumpled cloths for this purpose, four plies thick, and I need not add that as the Stewarton hive is made of wood only five-eighths of an inch thick it must have the protection of a bee house or shed from the direct rays of the sun, or better still an outer octagon case with a nicely bevelled roof.

"As soon as the lowest super is seen sealed at the windows the attachments between it and the stock below and the super above it are severed with a thin wire, so that it can be removed, letting the one above it take its place, and so on till the end of the season. When all are removed, the slides re-introduced, then as cold weather sets and the lowest breeding box vacated it too is better taken away, the slides replaced, the mouth wrapped up with paper to exclude moth and dust, and suspended in any cool dry garret till required the next season."

"This is a very accurate and intelligible description of the way of working the Stewarton hive, and is a valuable literary contribution to the science of apiculture. With this description and a Stewarton hive before him no bee-keeper can be greatly puzzled to know how to proceed. The hive in question can be worked on the non-swarming system the second year, and two swarms could be hived in it together at first instead of waiting ten days for the second swarm, as suggested above. The object aimed at is to get the breeding boxes full of combs, and supering to commence as soon as possible. The lady who puts the questions may be some guidecomb from stock hives in her garden.—A. PETTIGREW.

APIARIAN PROSPECTS.

WE are now past the middle of May, and can form some idea as to the probable character of the season from our point of view as apiarians. And what is the prospect before us? I confess that it looks to me gloomy enough. I am still feeding the majority of my hives, and can see but faint traces of honey collected in the strongest of them. There seems, in fact, to be no honey in the flowers; and, indeed, who could expect it with the ground soddened with perpetual rains and cold as it is, owing to the remarkable absence of sunshine? Unless a very extraordinary change in the weather takes place I fear we shall have to reckon the year 1877 as a disastrous one.

During the long-continued cold weather of this spring, ranging from February to May (on and off), breeding seems to have entirely ceased in some of my hives. One hive that was vigorously working in pollen in February died of cold a fortnight ago. On examining it not a dozen cells of young brood could be found. There was food, but too far off to benefit the bees, who must have risked their lives to fetch it.

Is my case an exceptionally bad one? and is this great Somersetshire plain a peculiarly unenviable one for an earnest bee-keeper to live in?—B. & W.

EARLY SWARMS.—A Kentish correspondent states that she was earlier than Mr. Cattlin, for she hived a splendid swarm on the

8th of May, and placed a glass on the hive. On the 9th of May another good swarm was hived, and the bees seem in a thriving state. They have not been fed throughout the season. On the 17th inst. one second swarm was hived from the hive that swarmed on the 8th, and they all appear to be very busy, though the weather is cold. Mr. Mace of Gunnersbury informs us that he had a good swarm on the 15th of May from one of Mr. Cheshire's hives. The parent hive has not had any food all the winter. Mr. Mace asks, "Being so near London, is not this a success?"

OUR LETTER BOX.

FEEDING PARROTS (S. C. G.).—Hempseed is good for Parrots if given sparingly. They should have rape, and at times easy seed. Sugar and cake are both very bad feeding. Ripe fruit is good for them; when that cannot be had water-cresses are good. Bread and milk make good food. When moulting, especially if the weather be unfavourable, the red capcicum may be given with advantage.

HEDGEHOGS (J. S.).—No one ever detected them sucking a cow. That they may lap up the milk shed from a cow in the field is probable if they happened to be close by when it was shed.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 47" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.						Rain.
	Barom. at Sea Level.	Hygrometer.	Direction of Wind.	Force of Wind at Foot.	Shade Temperature.		Radiation Temperature.		
1877.	Deg.	Deg.		Deg.	Deg.	Deg.	Deg.	Deg.	In.
May.					Max.	Min.	In air.	On grass.	
We.	30.69	56	S	5.0	56.7	41.5	66.5	49.7	0.00
Th.	29.80	52.2	S.W.	5.1	56.7	41.6	66.5	49.7	0.14
Fr.	29.97	59.1	N.W.	5.0	63.4	45.0	115.7	40.8	0.00
Sat.	30.18	59.3	W.	5.5	65.1	45.1	111.1	43.2	0.57
Sun.	30.25	57.0	N.	5.1	55.8	45.6	98.4	44.4	0.00
M.	30.475	51.2	N.	4.9	58.0	44.6	103.1	41.4	0.16
Tu.	30.184	48.3	N.	4.9	53.6	48.6	77.1	45.1	—
Means	30.21	52.0	45.9	5.1	58.4	45.4	96.	42.6	0.79

REMARKS.

- 16th.—Very fine till 11 A.M., then alternately fine or showery; heavy shower about 4 P.M. and slight frost at night.
 - 17th.—Showery till the evening, starlight night.
 - 18th.—Very fine early, fine all day, but rather less so than in the morning; a white butterfly seen.
 - 19th.—Rainy morning, heavy rain with thunder about 2 P.M.; rather fine at times in the afternoon, but wet again at night.
 - 20th.—Rain in the early morning, a damp cold day.
 - 21st.—Grey and rainy in the morning, rather bright in the forenoon, and fair all the day and night.
 - 22nd.—Another dull, cold, wintry-looking day; the ground being at night warmer than the air, and the sky overcast, the grass thermometer is higher than that in the shade.
- Temperature very similar to that of the previous week, and the little difference which does exist is the reverse of that which would be expected, for this week is even colder than last.—G. J. SYMONS.

COVENT GARDEN MARKET.—MAY 23.

WE have scarcely any alteration to quote, business being interrupted by the holiday. One of the largest consignments of St. Michaels Pines reached us last week. Over three thousand arrived in good condition.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	0 0	Nectarines.....	dozen	0 0
Apricots.....	1 bushel	0 0	Oranges.....	dozen	0 12
Chestnuts.....	1 bushel	0 0	Peaches.....	dozen	0 30
Currants.....	1 sieve	0 0	Pears, kitchen.....	dozen	0 0
Blackberries.....	1 bushel	0 0	dessert.....	dozen	0 0
Figs.....	dozen	3 20	Pine Apples.....	lb.	2 0
Filberts.....	lb.	0 0	Plums.....	1 sieve	0 0
Cobs.....	lb.	0 0	Quinces.....	dozen	0 0
Gooseberries.....	quar.	0 1 6	Raspberries.....	lb.	0 0
Grapes, house.....	lb.	0 12	Strawberries.....	doz.	0 6
Lemons.....	dozen	0 10	Walnuts.....	bushel	5 0
Melons.....	each	6 12	ditto.....	dozen	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	3 0	Mushrooms.....	pottle	1 6
Asparagus.....	dozen	0 6	Mustard & Cress.....	bushel	0 4
Beans, Kidney.....	dozen	1 6	Onions.....	bushel	0 0
Beet, Red.....	dozen	1 6	pickling.....	quart	0 4
Broccoli.....	bushel	0 0	Parley.....	doz.	bunches
Brussels Sprouts.....	dozen	1 0	Parsnips.....	dozen	0 0
Cabbage.....	dozen	1 0	Peas.....	quart	0 0
Carrots.....	bunch	0 0	Potatoes.....	bushel	2 6
New.....	doz.	1 0	Kidney.....	doz.	3 0
Capsicums.....	doz.	1 0	New.....	lb.	0 6
Calliflower.....	dozen	2 0	Radishes.....	doz.	bunches
Celery.....	bunch	1 0	Rhubarb.....	bushel	0 0
Coleworts.....	doz.	bunches	Salsify.....	bushel	0 1
Cucumbers.....	each	0 1 6	Scazzanera.....	bushel	1 0
Endive.....	bunch	0 0	Salsify.....	bushel	0 0
Fennel.....	bunch	0 3	Shallots.....	lb.	4 0
Garlic.....	lb.	0 6	Spinach.....	bushel	2 6
Herbs.....	bunch	0 1	Turnips.....	bunch	0 4
Lettuce.....	1 doz.	0 0	New.....	doz.	0 2
Leeks.....	bunch	0 4	Vegetable Marrows.....	0 0	0 0

WEEKLY CALENDAR.

MAY 31—JUNE 6, 1877.

Day of Month	Day of Week		Average Temperature near London.			Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.					
51	Th	Royal Society at 8.30 P.M.	59.4	48.8	57.1	3 51	8 4	11 57	11 6							151
1	F	Royal Institution at 8 P.M.	68.4	45.9	57.2	3 59	8 5	morning	8 59	19	2 36	152				152
2	S		68.9	45.1	57.0	3 49	8 6	0 13	9 33	20	2 17	153				153
3	SRN	1 SUNDAY AFTER TRINITY.	69.4	44.2	56.8	3 49	8 7	0 26	10 44	21	2	154				154
4	M		69.3	44.4	56.9	3 48	8 8	0 37	11 55	22	1 57	155				155
5	Tu	Royal Horticultural Society—Fruit and Floral Com-	70.5	47.3	58.9	3 47	8 9	0 48	1 4 7	23	1 47	156				156
6	W	Royal Microscopical Society at 8 P.M. (mittées at 11 A.M.)	69.9	47.6	58.8	3 47	8 10	0 58	2 19	24	1 36	157				157

From observations taken near London during forty-three years, the average day temperature of the week is 69.4°; and its night temperature 45.2.

A PLEA FOR THE ORCHARD HOUSE.



STATEMENT of Mr. T. F. Rivers was recently quoted in the *Times* to the effect that the damage caused by the May frosts this year amounts to a national calamity. Good reason had the esteemed author of the "Orchard House" to call public attention to the use of glass houses for insuring a crop. Some cynical people may say, "Ah! nothing like leather!" but I entirely endorse the recommendation of our friend, which I believe

to be entirely disinterested. For some reason or other I suspect that the popularity of orchard houses has been somewhat on the wane. The frequent failures of amateurs (resulting from inattention to the commonest rules for orchard-house culture) have engendered distrust. Now, it will never do to suppose that the mere erection of either a poor man's house* or a crystal palace of Paxtonian dimensions will insure a crop of fruit.

An orchard house does not require a profundity of knowledge, but it does want incessant care, and especially (as you hint in your issue of the 10th inst.) at the time "when the aphid pest periodically visits us with the advent of the young leaves." More utter ruin, I believe, is caused by this than any other destructive influence, or rather let me say by the apathetic toleration of this preventable mischief. It steals such a sudden march upon the unwary, it spreads with such amazing rapidity, that many a good easy-going man is hardly aware of the pest until irreparable injury is done. I go into my friend's expensive orchard house, and when I see the sickly appearance of the trees and that curled aspect of the leaves which tells a tale of myriads of desolating insects, I say, There is not one moment to be lost. Bring out your fumigating paper that requires no blowing, and give the green fly a double—aye and a treble dose of it; it may cause some of the leaves to fall, but you cannot help that, you must choose the lesser evil of the two; and even after fumigation make up your mind to look over every leaf to destroy any aphides which may have escaped or were yet unborn until the time for syringing and pinching begins.

It would be interesting to have a record of the experience of those who have orchard houses during the late rather trying season. Having waged a persistent and successful battle with the fly I can now begin to count my gains. In a house 104 feet by 14 I have 1600 Peaches

* The poor man's house referred to is described as follows on page 68 of "My Garden" by the late Mr. A. Smee:—"Another glass structure exists at my garden which is nothing more than a large frame so constructed that the gardener can get in and walk along. We call it the poor man's house, because it is erected so cheaply and answers so efficiently. To construct a poor man's house a hole is sunk in the ground 2½ feet wide and 2½ feet deep, and the earth so removed is placed at the back of the house. A single glass roof is fastened over the sunk part, and ventilation is provided by a board hung upon a hinge at the back. Vines are planted, which yield abundance of the highest-flavoured Grapes."

and Nectarines after two or three bold thinnings. This is by no means a large number in proportion to the space, but as Mercutio says, "Tis enough." The fact is, that owing, I think, to the weather having been too cold for the welcome incursions of bees (and I am fortunate in having next door an apiarian who takes first-class prizes at the Crystal Palace), the setting of the fruit has been capricious. The performance of some trees has belied their promise. On some every blossom has set, on others not one. On a favourite tree a particular branch shows abundance of fruit, while the rest, though equally healthy, are like Mother Hubbard's cupboard—bare.

The imposing feature in my house is the row of luxuriant cordons on a back wall 12 feet high, according to Mr. Brébaut's plan, except that not all the oblique trees are triple cordons. I prefer the French single cordon; it is more manageable, and if any tree fails its place is more readily supplied. I defy any scornful gardener who hates trouble to call these "toy trees" forsooth! some having as many as 150 fruits on them as large as Walnuts, and with shoots that have already been pinched to three or four leaves as large as those of the Laurel. I have two rows of trees in pots. In the front row every tree has a fair supply of fruit; in the back two-thirds of the trees have a *nil* return, but they are younger trees, and they will be all the better another year for their present sterility.

I may mention that all my warming apparatus consists of three lamp stoves, only used on cold nights when the blossom might otherwise be injured by the frost; also this fact, that the leaves of two of my cordon trees appearing yellowish, my brother, a man who eats Toadstools and is of decidedly chemical propensities, asked, "Why don't you dose them with a little muriatic acid?" So, expecting either to kill or cure, I put about a table-spoonful of that strong poison into a pail of water and soused the roots of the trees affected, and their leaves now show as deep a green as those of the best.

"Prospero. But are they, Ariel, safe?
Ariel. Not a hair perish'd;
On their sustaining garments not a blemish,
But fresher than before."

—H. W. HODGSON.

A CHAT ABOUT ROSES.

In your issue of May 17th I see a complaint about the dearth of information respecting Queen Rosa, and asking, among other causes, if the "love is growing cold?" or if there is "nothing to write about?" Answering for myself, to the former query I say, Warmer than ever. To the latter, Plenty to say, but no inclination to write, more especially after being so unnamably "blown upon" after the last general election of Roses. The columns of "our Journal" are open to the contributions of the humblest rosarian without being satirised anonymously.

Now to my purpose. I have long thought that many of the complaints about certain old favourite Roses not doing

so well, though in the same hands and under the same treatment, may arise from the insertion of bad buds to begin with. If in animals the blood runs out, and in budding fruit by constant budding the strain becomes weak, why should it not do so in *Rosæ*? How many millions of buds have been put in; how many stocks raised from the far-back original *Rosæ*? Do not they deteriorate from continual budding? My neighbour, Mr. W. Fletcher, one of the largest and most successful *Rosæ*-growers in Surrey, is of opinion that some do. For instance, Charles Lefebvre, Céline Forestier, and Géant des Batailles are not nearly so good as they were years back. I do hope that I may be mistaken, and that it is because newer and better varieties put the old *Rosæ* in the shade and crowd them out of the catalogue.

I fancy amateurs, as a rule, do not cut-back their *Rosæ* hard enough or thin them out sufficiently. I have seen many plants like mops. If half the wood had been taken out and a few strong young shoots left, they would throw much finer blooms. I have nearly decapitated a few old *Rosæ*; so hard did I cut them that I was told by a friend that I had done for them. Now they are throwing out vigorous shoots. *Rosæ* should be lifted every four or five years, the roots pruned, and some fresh soil, with a good mixture of cow and pig manure, put in with them.

My soil is a very stiff clay, so stiff that it has to be cut out in large square blocks turned up edgewise for the sun and air to act upon, when it may be broken up for use. In summer it is mulched heavily to prevent cracking and being as hard as pavement. It suits Briars most admirably, very few die; nearly all the buds inserted last season have succeeded. The soil will not suit Manetti or own-root *Rosæ*.

In my roseray in Kent I had, protected with Bracken, out all the winter a few years back, Cloth of Gold, Triomphe de Rennes, Rubens, Marie Van Houtte, Augusta Vacher, Belle Lyonnaise, Belle Maconnaise, La Boule d'Or, Bougère, Catherine Mermet, Comte Taverna, David Pradel, Elise Sauvage, Jaune d'Or, La Sylphide, Louise de Savoie, Madame Camille, Madame Dr. Tutte, Madame de St. Joseph, Madame Marie Amand, Madame C. Berthod, Paotulus, Pauline Labouté, Sostrate, Sombrelin, Souvenir d'un Ami, Souvenir d'Elise, Duc de Magenta, Madame Caroline Kuster, Marie Ducher, Monsieur Furtado, and Unique. Two or three weak plants I lost. The above grew most vigorously the next summer, quite altering my opinion that *Tea Rosæ* are so very tender and require so much coddling during the winter. La Boule d'Or and Keine du Portugal had huge tight buds, but never opened-out in the open air.

On looking over my Briar stocks (by the way, is it Briar or Brier?), I find a few black specks. The old hard brown stocks throw the best shoots. Orange fungus is showing itself. There is nothing for it but stamping it out—i.e., destroying the stock it is on.—GEORGE W. JESSOP.

VINE MANAGEMENT.—No. 1.

On page 285 notes have been published relative to *Vines* which have produced heavy crops of Grapes for thirty years, and which are still improving in vigour. As these *Vines* have been grown in the simplest possible manner and have produced Grapes such as are in general demand for ordinary dessert purposes, and as the majority of growers desire similar produce—that is, a maximum quantity of useful table Grapes with a minimum expenditure in the way of preparation and management—the system which has been adopted, plain as it is, or rather on account of its plainness, may be described as possibly affording hints of guidance to some amateur cultivators. How inexpensively the Grapes have been grown may be gathered from the fact that no bones have been used in the borders and no hot-water pipes employed for heating the houses.

PRUNING.—The *Vines* have been pruned on the short-spur system generally, yet in conjunction with a modification of the "long rod" mode of training. That is, so long as close pruning produced satisfactory crops it was adopted, but immediately signs of exhaustion were apparent young shoots were tied-in much after the manner adopted in the pruning and laying-in the young shoots of Peach trees. When this system has been adopted with a *Vine* a young shoot has also been selected and trained from the bottom to form a future main rod. This primary shoot has had the best position possible assigned it to render its growth satisfactory. At each winter pruning the new rod has been shortened to a length of 3 to 5 feet according to its strength and the condition of the *Vine*

generally, and when the new rod has reached the top of the latter the old one has been cut away; but in the meantime the spurs on the old *Vine* had been removed and the buds rubbed off in proportion as space and light were required for the new rod and foliage, the lower portion of the old rod being eventually denuded of all growing parts, so that when it has been finally removed only the top portion of, say, 3 or 4 feet has contained any young wood. Thus have the *Vines* been renewed one after another as required, and without a blank in the crop ever occurring.

DISBUDDING.—In this mode of renovating *Vines* special attention must be, and has been, paid to disbudding. The results of a faltering hesitancy (which is so common) in removing superfluous buds in spring inevitably leads to overcrowding of the foliage during the summer, to all sorts of *Vine* ailments and unsatisfactory crops of Grapes. This matter was prominently alluded to on page 263 by "A KITCHEN GARDENER," who, I happen to know, has had such high training as a *Vine*-grower that falls to the lot of few men. He could not have directed attention to a more important phase in *Grape* culture than that of disbudding, nor at a more seasonable time. There are scarcely any *Vines* that do not push from three to five times the number of shoots in spring more than a good cultivator would permit to remain. The removal of superfluous shoots may be gradual, extending over two or three weeks, but those eventually remaining must be so thinly disposed that every leaf can expand freely and receive the light directly on every part of its surface. That has been the plan adopted with the *Vines* in question.

The measurable distances for leaving the shoots depends on circumstances. If the foliage of the *Vines* is medium-sized—say averaging 8 or 9 inches in diameter—and a large number of moderate-sized bunches is the object in view, the shoots may be trained about 15 inches apart; but if the *Vines* are very luxuriant, and the foliage is likely to expand to a foot in diameter, and a limited number of large bunches are coveted, then the lateral shoots should not be much nearer than 2 feet from each other. They may be stopped at one, two, or three leaves beyond the bunch according to space. The more foliage a *Vine* produces the better it is, provided every leaf has light. More failures in *Vine*-growing occur from overcrowding or mismanagement of the foliage than from any other cause. Plant a *Vine* in any good ordinary garden soil and it will grow freely; cover it with glass, and provide a correct system of management, and good Grapes will follow; but no elaborate border—indeed nothing—can compensate for tangled shoots and shaded leaves.

I have arrived at those conclusions after a tolerably fair share of practice, supplemented with much observation. I think I have seen the best and the worst examples of *Grape* culture in Britain, and while I have often found splendid crops on *Vines* growing in unprepared borders—I mean the natural soil with manual additions—I have never seen good Grapes on *Vines* when the foliage has been overcrowded, even when the roots have been provided with a dainty and really excellent compost of turfy loam, bones, &c.

CLEANLINESS.—Another matter of considerable moment which has been duly attended to in the continuously fruitful thirty-year-old *Vines* and still "improving" has been that of cleanliness. Without perfect cleanliness of the foliage there cannot be good health. There must not only be freedom from insects, especially red spider, but freedom from dirty incrustations. As previously stated, red spider has never given any trouble, neither does it cause any anxiety now, for the atmospheric uses of guano keeps the pest outside the houses. As to unclean foliage in other respects it frequently arises from two very opposite causes—namely, "raising a dust" in the houses by sweeping; and regularly syringing with water apparently clean, yet leaving a deposit behind it. Someone has truthfully said that "great results from little causes spring;" this applies to bad as well as to good issues. It is a little matter, perhaps, to sweep the paths and stages of a vineyard half a dozen times each week, especially when the work is done, as is often the case, by a "little" boy, who each time only raises a "little" dust. The greatness of the danger here lies in the smallness of its parts: separated, they are trifles; united, an evil is created of no small magnitude. Let all gardeners—all men—beware of the insidious, almost impalpable atoms of evil, and many a great danger will be averted. I am quite certain that when I was a "little gardening boy" I did about as much injury to the *Vines* by carelessly "sweeping out the houses" as the gardener did good by

syrring the Vines. In that case both the practices as then performed were wrong. It is obvious the dust must have been injurious, and not much less so were the twice-daily syrrings, for the water at that time left the foliage of the Vines before the end of the season as "white as a miller's hat." So long as that practice lasted good crops of Grapes were never seen in those vineries.

The floors and stages of a vinery during the growing season ought never to be in such a state that any "little boy," however much he may try to do so, can raise even a "little" dust daily with the aid of a housemaid's broom. Water should be used sufficiently freely that no dust accumulates, then none can rise to soil the foliage. Syrring then becomes a superfluity—that is, as ordinarily applied to the under surfaces of the leaves, a little water, perhaps, "settling on" the surfaces, leaving its sediment marks behind it. In the vineries alluded to dust is never permitted to form, and the regular moisture preventing it is immediately conducive to the health of the Vines. This is quite compatible with allowing the paths to become quite dry at least once a day, and when the broom is outside the houses.

I think I have stated that the Vines are never syrring, but they have always had periodical "washings" during the season—very different from ordinary syrrings. Notwithstanding that dust is not permitted to form in the house, sooty particles will in time settle on the foliage. The syrring is then brought into requisition in a thorough manner, not, however, guiding the water to the under sides of the leaves where the particles are not, but directing it with force as much as possible between the leaves, striking the glass, whence it falls in volumes on the leaves, rinsing them thoroughly and leaving them clean. I cannot say how many years I have practised that mode of "washing," but long enough to prove it good, and it was adopted "long before my time" by some of the best Grape-growers in their generation. When the syrring is judiciously done the falling water trickling from leaf to leaf and amongst the berries does not in the slightest manner impair the bloom. Like a drenching shower in nature it cleanses and refreshes, and is all the more potent by its thoroughness and comparative infrequency.—J. WRIGHT.

CULTURE OF NEPENTHES.

You published last week a most excellent illustration of the exceedingly rare, and beautiful as rare, *Nepenthes sanguinea*. The plant is very scarce in its native country, which is Java—so scarce that a collector could find a dozen or two plants of it, it would be a prize indeed. A plant such as that figured would be worth sixty guineas in the trade. There are other species of the family more easily obtained, and, in their way, of equal beauty, and to these I will now refer.

N. Raflesiana should stand high on the list; it is a native of the hottest districts of the world, being found principally in Borneo and Singapore. The plant grows rapidly, and the pitchers, though not quite so brilliant in colour as those of *N. sanguinea*, are larger and prettily marked with purplish red. A full-grown specimen will hold a pint of water. Nearly allied to it, if not a variety of the species, is *N. Hookeriana*; the formation of the pitchers, their colour, and also the habit of the plants, are very similar.

N. distillatoria is one of the most free-growing of the species, and has been grown in this country much longer than any other species; it was received from China in 1789. I saw this species growing at Drumlanrig under the care of Mr. D. Thomson with the largest pitchers I have ever seen. The plants were trained to the rafters of the house and had grown to the length of at least 15 feet, and they had a very novel and distinct effect. Others of the species were treated in the same way and had given equally good results. *N. ampullacea* is also a desirable species of free growth, and is also adapted for training to the rafters.

There are also some very handsome varieties which have been raised in the nurseries of Messrs. Veitch of Chelsea, in the first place by Mr. Dominij and latterly by Mr. Seden. *N. Dominij* is one of the earliest results, and this variety crossed with *N. Hookeriana* gave *N. Chelsoni*; this is what our florist friends would call a good "offer." It has pitchers, "the shape of a broad flask somewhat dilated and flattened below, with ciliated wings, rather broad, and forming a very handsome appendage; the margin is broad, and the lid smaller than the mouth." The pitchers are high-coloured like *N. Hookeriana*. *N. intermedia* is another Chelsonian novelty

raised from *N. Raflesiana*, and partakes of the character of that fine sort. If we add *N. Sedeni* the above list contains nearly all the desirable species and varieties, and no plants are easier of cultivation if they receive sufficient heat and moisture.

They grow equally well in pots or in baskets suspended from the roof of the houses. If grown in pots these should be filled half full with clean potsherds, and over the drainage place about half an inch of clean sphagnum; then the compost, which ought—indeed must—consist of the best fibrous peat and sphagnum in equal parts, with a few bits of charcoal and potsherds mixed with it; and in potting great care must be taken not to injure the small roots, as, if they are much broken, the plant suffers severely.

Nepenthes are propagated very freely from seeds, but as the plant is dioecious the seeds cannot be obtained unless the male and female are in flower at the same time, which does not often happen in small collections. But they may also be propagated from cuttings, and this is about the only way available to private growers. I strike the cuttings in small pots, placing them in a shady part of the stove; they take two or three months to form roots in that way.

Except for about three months in the year the night temperature should not be lower than 70°, in winter 65°, and when the plants are in free growth they take a very large quantity of tepid water both on the leaves and at the roots.—J. DOUGLAS.

IN FLORA'S LONDON DOMAIN.

WITHIN the length and breadth of our great metropolis Flora may be seen under many aspects—growing under an *embarras de richesses* in the mansions of the west, and anon struggling through a feeble sickly existence in some miserable attic at the east. But however treated, with skirts all decked with many-coloured blooms or dragging through the mire of some 12 feet square of back yard, Flora must still be wooed to remain with us, to give to the weary worker for daily bread a glimpse of the dainty surroundings which Nature keeps to spread paths of pleasantness for those who labour in her fields.

Of the possibilities and impossibilities of floriculture in London much has been said, but only those who try to put details in practice know half the difficulties of the situation. Much is of course done, and more might be accomplished before we should attain to that utopian state of horticulture foreshadowed many years ago by a writer in "Once a Week." In the roseate smokeless atmosphere of his imagination house-top gardens were to form the recreative pleasures of future householders, and the happy hunting grounds in which chaperons might seek eligible *partis*. At present we have not attained to that desirable state of pure air which would make such resorts pleasant; nor, in spite of the improvement in horticultural buildings and the tax off glass, have we attained to roofing in our dwellings with conservatories. Drawing the reins of our imagination, and dismissing house-top gardens under the above aspects as at present beyond our province, it may not be unconstructive to look on to the roofs of certain dwellings and peer into back yards and similar localities, observing each spot where we may trace Flora's steps and searching out fresh nooks in which she might with advantage set her foot.

Following in the wake of Captain Cuttle, when I find anything fresh I make a note of it; and a noteworthy example of gardening under difficulties I saw last summer within sound of Bow bells—in fact not many hundred yards away from the arcadian precincts of St. Giles's. In this spot the right man had evidently fallen upon the right place, the capabilities of which he had developed to the utmost. The spot was the leads outside the upper—nay, the very uppermost storey of a model lodging house. Within this limited area there was a garden—a veritable garden, with bright fresh green foliage and many brilliant flowers, each so do not disdain to bloom even in uncongenial quarters. The most conspicuous plants in this garden overhead were giant Sunflowers, which reared their large round yellow heads as proudly beneath a London sky as though they were growing by some far-away country cottage; and from this fact I received unanswerable confirmation of my own suggestion, that for town growth the Sunflower is a most suitable subject. In the first place it has enormous capabilities for absorbing moisture, and the most depressing of English summers with its average downpour would only make it grow the finer. Should an exceptional season arrive the yard or garden in which Sunflowers are growing may form a fountain

of refreshment to all the apartments round. No amount of water can injure its absorbent foliage, and any quantity poured over its broad leaves and around its roots will but serve to increase the size of its really fine tropical foliage. The dimensions to which these plants are capable of attaining is known to but few beyond the fraternity of gardeners. Were it not so I feel sure so many dingy barren places would not be found about the homes of town dwellers. Nor is it absolutely necessary to have a garden in which to grow Sunflowers, or, indeed, other plants. Large pots, or, better still, tubs or zinc pails painted a dark reddish brown, form capital receptacles for plants; and in these they may be placed in balconies and areas, and a good show be made at little cost.

In town gardens it is as well not to attempt too much. Our model lodger already alluded to had kept the happy mean. Beyond the Sunflowers he had a goodly display of Indian Corn, not stunted specimens but fair-sized plants, the form and colour of the leaves of which presented an excellent contrast to those of the Sunflowers. Creeping Jenny there was in plenty, hanging in rich flower-covered festoons from the windows, and covering the sides of suspended rustic baskets. As a contrast, a few scarlet Geraniums had been induced to bloom; and these, again, were relieved by some dark blue Lobelia, while sweetness of perfume was represented by Stocks and Mignonette. Those who have real gardens with sunny skies above their heads, and numberless flowers at their feet, may not think much of these things; but look upon the picture I have already drawn and then upon this: A similar flat square outside a dwelling; instead of festoons of Creeping Jenny, dirty dishcloths hung out to dry, broken pots and pans instead of pots of plants, while the sweet scent of the Mignonette is replaced by old bones and other decaying matter; whereas if the very meanness of Flora's train were introduced into spots like this, foul rags and uncleanly equal would rapidly make way before pleasantness, freshness, and beauty.—T. S. J.

NOTES FROM MY GARDEN IN 1876.—No. 6.

RANUNCULUS.

AMONGST the florist flowers, over the decline of which in the south of England I as an old florist have had to mourn, is the Persian Ranunculus. In former years there were many who grew and exhibited it, and now it is almost an unknown flower. In my early days there was a quaint old grower, who used to live at Farnham, who grew them well and had most of the good old Dutch varieties. He has long since gone; and as I intimated some little time ago, Mr. Carey Tyso, who has alone maintained its culture as a grower for sale, has given them up, and I verily believe I am left alone in my glory. And yet what a lovely flower it is! Where is there such perfect symmetry or greater variety of colour—so perfect that no dresser however expert would for a moment dare to improve on it? And yet I can readily understand why its culture has been so much given up, for it involves an immense deal of trouble: the planting has to be made at an unkindly time of the year—about February 12th—one is apt to get "finger cold," and the roots are so small that it is necessary to be wide awake; then you must manage to plant them at the proper depth, $1\frac{1}{2}$ inch, or they will not form good roots for another season; then, unless you shade and a hot sun makes its appearance, they are quickly out of bloom. Moreover, they must be taken up before they have a chance of starting afresh, for if they do they are done for. And then each variety has to be kept separate; and where a collection involves, as mine does, three hundred and upwards, that is no small trouble in itself. But the flower was one of my earliest favourites, and until I am compelled to do so I hope to continue to grow it. But unless to an amateur who really loves the flower such trouble as this is intolerable. Gardeners would find it simply impossible to give the time and attention it requires.

I do not know how it is, but it is impossible to obtain from Holland the old varieties for which the Dutch used to be famous. I have had during the past few years more than once collections through some of our bulb importers, but they were quite worthless—pretty enough as border flowers, but in no way to be compared to the sorts to which I allude; while in all edged and spotted flowers the varieties raised by Messrs. Lightbody, Tyso and others are, I think, improvements on the Dutch sorts, especially in the matter of freedom of flowering; the selfe of the older growers seem to be unequalled.

My bloom in 1876 was one of the best I have had for some years, and certainly I enjoyed it more; for instead of putting

a low covering over the two beds as I had previously done I erected over them my Gladiolus shading, and thus was enabled to walk under it instead of having to stoop down and examine, and as one gets older I find these little matters come to be a consideration. It were useless to say what sorts were finest or to give a list of varieties to be recommended, for I do not know where any are to be procured unless Mr. Tyso did not sell all his stock as he wished.

CARNATIONS AND PICOTEES.

Here, alas! I have to speak only of disaster and disappointment. I was obliged to be away about the time of blooming and so saw but little of them; and as the person who has generally layered them for me could not do so I had to entrust it to a novice, and the result was that the greater portion of them never struck at all. Having, too, owing to other circumstances been obliged to curtail some of my cultures, and looking to the fact that I was generally much away at the time of blooming, I have this year given up growing them in pots, and have only one bed of them. I should not perhaps have alluded to them at all but that I wish to say a few words concerning dressing, &c. I have read or heard nothing that induces me one whit to give way in the opinion that I expressed that the style in which they are exhibited is misleading. I think it is quite right that whatever is exhibited—fruit, flower, or vegetable—should be exhibited to the best advantage; and hence to arrange the truss of an Auricula, to flatten a Pansy, to show the bells of a Hyacinth, to disbud a Rose tree, thin out a Peach, or highly stimulate a Celery trench, come in my mind within the bounds of legitimate aid; but it is in my judgment an entirely different thing to mutilate a flower by taking out any number of petals, and to make a grower as dependant on his powers of dressing as on the excellence of his culture. I was the other day talking to a very eminent florist, a lover but not an exhibitor of the Carnation. This subject came up in the course of conversation. He thought dressing was allowable, but then he meant simply the arranging of the petals; and when I spoke of the taking out of the petals he shook his head and said, "Oh no! that is a different thing." I visited one of our greatest northern florists last year and said to him, "What number of petals do you consider a Picotee or Carnation ought to have?" His reply was, "Twenty-one or twenty-two." I took one flower to pieces on my return and counted forty-seven. "Do you," again I asked, "think there is any difference between the taste in the north and south?" "Well," was his reply, "we don't care much for your flowers when they come north, so many of them are mops; but you seem to like our flowers when they go south. Two flowers came north here with first-class certificates from the Royal Horticultural Society which I just threw on the rubbish heap."

I have thus said my last say on this subject, and shall take no notice of any criticisms that may be made. I am conscious (and in this instance I hope I know myself) of only one motive—the advancement of flowers I have ever prized. It will be remembered by some that when George Glenny, to whom all modern florists owe more than can well be expressed, once drew a circle and told raisers of Pansies and Geraniums that was a perfect flower and they must strive after that, what scorn and derision he met with even from those who were at the very time engaged in raising them, and yet we have seen his standard reached; so although I (only following him at a very humble distance) venture to hope that such raisers as Ben Simouite will present us with flowers which will require but the arrangement of their petals, and that a stand of twenty-four blooms will not require days to make it presentable on an exhibition table. Some such flowers we have already, and I see no reason why in every class their number may not be greatly increased.

Since writing the above I have seen Mr. Llewelyn's letter on the Auricula blight, and would like to say that my losses fell mainly on my earlier plants and that I have now a good stage in bloom, thus leading me to hope that the mischief has abated. Undoubtedly my loss was mainly owing to the fact that I had never heard of or seen any reference to it until the notice in the Journal. Had I been aware of it in the autumn I might have saved a large number of my plants.—D., Deal.

ANTHURUM SEEDS POISONOUS.

ALLOW me to supplement my letter on the above subject by stating that on taking up the covering of the pipes outside the Orchid house to discover if possible whether any more rats

were there, I found five others all dead, and smelling most offensively. These were all within 4 feet of the Anthurium seeds, and I think there can be no doubt now as to the cause of their death.—T. M. SHUTTLEWORTH, F.R.H.S.

TRIFLES AND THEIR CONSEQUENCES.

"The very law which moulds a tear
And bids it trickle from its source,
That law preserves this earth a sphere,
And guides the planets in their course."

THAT law was suggested to its discoverer by observing the fall of an Apple. Botany became the study of a life from the discovery of a Wood Anemone in flower. A greenhouse was robbed and the thief was revealed by the pane of window glass being broken from the within side. The Fuchsia was introduced by the casual observation that a strange flower had been seen at Wapping. The story will bear re-telling. Mr. Lee, nurseryman, Hammersmith, was told of a flower coloured crimson with a fold like purple ribbon in its centre. He hastened to Wapping, found the plant, and for eight guineas induced the owner to sell it, though she wished to keep it because "brought from the West Indies" by her husband. Mr. Lee propagated it rapidly from cuttings, and in the following year sold three hundred rooted plants for as many guineas. A heavy flagstone that became loose despite repeated re-setting was found to be displaced by a fungus beneath it. The Dutch Rush (*Equisetum hyemale*) is largely imported because the flint in its bark polishes brass and ivory efficiently. We know an instance where ague was cured by the use of the bark of the White Willow (*Salix alba*). Quinine was not obtainable, but one of the party knew sufficiently of vegetable chemistry to tell that the Willow contains salicine, which closely resembles quinine as a tonic and astringent.—G.

THE EFFECT OF FROST ON FRUIT BLOSSOM.

WHEN visiting a garden recently, in which were many fruit trees, the gardener was deploring the state of the Peaches, Apricots, and Plums, nearly all the blossoms of which appeared to be killed; but the Apple blossom was expanding freely after having been exposed, previously to its opening, to three nights of frost, on which 9°, 10°, and 14° were respectively registered. The late Pear blossom was also expanding, and much of the recently set fruit was apparently uninjured. A fair crop of Pears was therefore being relied on, and a full crop of Apples. Having paid some attention to the effects of frost on fruit blossom in previous years I urged closer examination of the blossoms in question, which were so beautiful to the eye but yet so deceptive. On dissecting quite a hundred of the more promising, only one was found to be sound at the core, and instead of the large crops of fruit anticipated there will be scarcely any fruit to gather from the trees which we examined.

A few years ago the effect of frost on fruit blossoms was made very plain in the columns of the *Journal of Horticulture* by one whom all who know him admit to be one of the most experienced and practical of cultivators. The remarks and figures submitted by "ARCHAMBAUD" are particularly appropriate to the present season, and will afford aid to many who are desirous of ascertaining the real position of their fruit trees. They are as follows:—

The effects of frost are in many instances very plainly presented to us, when, as with the Potatoes and the young shoots of the Walnut, the leaves, &c., are blackened and destroyed, or, as with the Gooseberries, when the berries are seen to be blistered and discoloured, and within a day or so fall from the tree. And, again, its effects upon stone fruit—Apricots, Peaches, Cherries, and Plums, are also plainly shown and pretty generally understood. The injury may be committed first on the style or pistil, yet it soon descends to the ovary, and the whole fruit is rapidly blackened and seen to be dead. One second's observation will show this—just merely opening the scales of the calyx, splitting the flower, or what covers the young fruit, when it is at once seen.

In the case of the Apple and Pear the injury which is effected through frost is not so very apparent, and very confused ideas seem to be held by many regarding it. I have found, indeed, that many gardeners, otherwise well informed, have no idea whatever as to its immediate effect, or whether their blossoms or young fruits are injured or not until they can be pulled off easily, or they fall from the tree. As this does not happen frequently until some weeks after the injury, all traces of the

true cause, and there are several others which would cause them to fall, are therefore lost sight of.

The flowers of the Apple whilst they are in their full beauty, as shown by fig. 53, indeed, sometimes whilst yet unexpanded, may be killed, and yet show no outward signs to the general observer.

The accompanying fig. 53 represents a healthy and perfect



Fig. 53.

example of the blossom of the Apple, showing it in its perfect and uninjured state. The style, as will be observed, is in this example in its natural healthy pale green colour.

Fig. 54 represents Apple blossom at the same stage, and in



Fig. 54.

the same condition in every part but one. The style, it is to be observed, is in this instance black, and the thin black threads extend from its point right to the ovary or embryo fruit at the bottom. That flower is killed by frost, and yet the flower itself, the beautiful petals and the little stamens in the centre, are as lovely as ever. The fruit, however, which was to have been, is gone. It is dead.

By examining the blossoms as suggested above a tolerably correct estimate may be formed as to the real injury that the frost has committed on Apples. The examination it is to be feared will in very many instances reveal what is not pleasant to anticipate—namely, prospective barrenness on trees laden with beautiful blossoms—outwardly healthy yet deceptive—sterile.—W.

OUR GARDEN FRIENDS AND FOES.—No. 2.

ON returning to this subject I observe that "A MARKET GARDENER" says the greenfinch is one of the birds which denude fruit trees and bushes of their buds. I never before knew this bird to be accused of this delinquency, neither do I believe it to be guilty. In common with the chaffinch and the

linnet it will take extraordinary liberties with seed beds of all the varieties of the Brassica tribe of plants, and will also pull up young Lettuces, &c.; but if the seeds a few hours before being sown have been slightly wetted and dusted with red lead neither finch nor linnet will interfere with them. They are also very troublesome where seeds of any plants of the Brassica family are becoming ripe, when they can hardly be kept away from them; even nets will frequently fail to protect such seed from their ravages. Altogether the greenfinch can hardly be considered as a garden friend.

There is a finch, however, which deserves to come under the denomination of a garden friend, and certainly the most beautiful of all English song birds—viz., the goldfinch. He does not, however, greatly frequent the garden, unless it be in cases where weeds of various kinds are allowed to run to seed, which it is needless to say is not in accordance with good gardening; but whenever this is allowed to take place the goldfinch is almost sure to put in an appearance, yet he seldom or never interferes with seed beds of any kind, nor has he ever been known to pick buds from fruit trees. The hawfinch is a very handsome and somewhat rare and remarkably shy bird. He is fond of Green Peas, and he will also occasionally extract the stones from ripe Cherries, which he readily cracks with his powerful bill for the sake of the kernel. Being far from numerous, however, they seldom do much harm in the garden.

The fruit-eating propensities of the blackbird and the thrush are unfortunately too well known, but they are at the same time great consumers of insects of various kinds, and must consequently be of considerable service in gardens, which they generally very much frequent. Their song is admitted to be delightful, and ought to be allowed to atone for many of their offences. In woodland districts, however, they are found to increase so rapidly that, as in the case of the house sparrow, it is found to be quite necessary to reduce to some extent their numbers; but it would hardly be fair to class them as garden enemies.

The starling may, I think, be justly regarded as a garden friend. He consumes large quantities of various kinds of caterpillars and other insects. He will sometimes, it is true, during very dry seasons help himself to a few ripe Strawberries or Cherries, but I have never even in this respect known him to do much harm.

The blackcap, and the whitethroat or wallbird, live chiefly on insect food, but they are nevertheless very troublesome during the fruit season, particularly as regards the Raspberry crop, picking at the ripe or ripening fruit, generally spoiling more than they eat, and they almost refuse to be driven away. It is possible, however, that the good they do in the destruction of insects may more than cover the evil resulting from their depredations.

The robin is a privileged bird, and the rudest bird-nesting boy would hardly think of injuring him. He feeds mostly on insects, but when the Red and White Currants are ripe he helps himself to a few with the air of one who considers himself perfectly welcome to do so. During wintery weather he does not object to shelter himself in a house of ripe Grapes, the quality of which he will speedily endeavour to ascertain. In this way he inflicts considerable injury, as the berries so picked at once commence to mould and decay, and this decay spreads rapidly and soon affects the entire bunch, so that it is quite necessary to drive him from the structure, which he will leave with evident reluctance.

The hedge sparrow, wagtail, nightingale, wryneck, and the wren are all frequenters of the garden, and are all strictly insectivorous, perfectly harmless, and effecting much benefit by their consumption of various injurious insects. They should all be strictly preserved and encouraged as much as possible.

The rodents likely to frequent, or rather infest a walled-in garden, are few in number, consisting of the rat, the mouse, the mole, and the squirrel. The hedgehog is considered to be useful in gardens, and he is certainly quite harmless; but if he is desired to be there he must be introduced, as he is unable to enter scale or undermine a garden wall. His food principally consists of beetles of various kinds, molluscs, &c., and he is strongly suspected, perhaps not unjustly, of eating the eggs of the Pheasant and the Partridge when they come in his way, which I believe to be the utmost extent of his offendings, and on this account he is mercilessly destroyed by game preservers wherever he is found.

As regards the rat nothing can certainly be said in his favour. He is troublesome, mischievous, and wantonly de-

structive. He appears to be perfectly aware that the hand of everyone is against him, and he retaliates as best he can. The mouse is only in degree less objectionable, and both may, in the full sense of the word, be considered as garden enemies.

On pasture land, and on the farm generally, the mole is considered by some to be rather beneficial than otherwise; but his presence under any circumstances cannot be tolerated in the garden.

With regard to the squirrel, "WILKINS RECTOR" says he lives on Beech mast. I only wish he did. He may do so sometimes when he cannot find what he likes much better—viz., Filberts, Cob Nuts, Walnuts, &c., and during the season an occasional Peach, Apricot, or Plum. He eats the fruit with great apparent relish, and then he cracks the stone and eats the kernel. I do not blame him for the latter part of the process, as in seasons when fruit is scarce nothing should be wasted. But he also bites the leading shoots from the finest and most rare Conifers, and does great mischief among plantations of young trees of all sorts. He is altogether a very sad rogue, and it is difficult to find a word to say in his favour.

A custom prevails at funerals among the Dutch settlers in Natal for some one of the deceased's friends to make a short oration at his open grave, recording his virtues and the good deeds, if any, performed by him during his earthly sojourn. It happened, however, that an individual died who was not considered to have been possessed of any virtues whatever, and had never performed any good deeds. Consequently in his case the melancholy obsequies were nearly being completed in silence, when one of his countrymen raising his voice said in solemn tones, "H'm was a berry good smoker." And as regards the squirrel it may be said he is a merry, active, little fellow with a beautiful tail, and he is without doubt a splendid jumper.

I will close with a word or two regarding a true garden friend, which, notwithstanding, not infrequently meets with cruel treatment—for no other reason that I am aware of than because his exterior (notwithstanding the charm of a pair of brilliant eyes), is not considered ornamental. I allude to the toad, the good services of which in Melon and Cucumber pits, Orchid houses, &c., cultivators are, generally speaking, well aware, one or two toads being generally found to speedily free such structures from woodlice, ants, earwigs, spiders, &c.—P. G.

Various opinions have been expressed in the Journal of late with regard to the damage done in gardens by bullfinches and tomtits, but no notice seems to have been taken of another bird, the bluecap or willow-biter, which in this district is much more numerous than either of the other birds, and is thought to do an immense amount of damage amongst the fruit buds, more especially the buds of the Gooseberry. I should be glad to learn whether the same is the case elsewhere.—E. C., Oakham.

[This is the bluetit, which in some districts is called the willow-biter, and in others "billy-biter." It is essentially an insectivorous bird, although it occasionally commits injury to fruit buds. Mr. Weir has observed that a pair of these birds fed their young 475 times in seventeen hours, working incessantly from half-past 3 A.M. to half-past 8 P.M. They appeared to feed them solely with caterpillars.—Eds.]

JOTTINGS ON ROSES IN POTS.

WHILE "WYLD SAVAGE" is bemoaning the scarceness of Rose controversy in the Journal, we in the neighbourhood of London have been feasting ourselves on the most glorious sights of Roses imaginable. If "WYLD SAVAGE" could have been present, or was present, he would have exclaimed, instead of "love is growing cold," that it waxeth stronger than ever. The eighteen Roses staged at the Crystal Palace by the champion growers—Messrs. Turner of Slough and Paul and Son of Cheshunt—were indeed a feast in themselves, while at the Royal Botanic Show, only just four days afterwards, the same exhibitors brought thirty of these tremendous bushes in greater perfection than ever. The Paul Perras and Edward Morren of Mr. Turner were perfection. Edward Morren has never before been shown by any grower in such a high state of excellence. No savage ever trained such a plant. Every one of the hundred or more perfectly expanded flowers on this bush would have done credit to any stand of twenty-four cut blooms. Mr. Paul's Madame de St. Joseph at the Crystal Palace was indeed grand, as also were his bushes of the slower-growing dark Roses Alfred Colomb, Marie Baumann, Horace

Vernet, Dr. Andry, and Madame Victor Verdier. I think I am safe in saying that the whole of the forty-eight large bushes staged at the Crystal Palace and Regent's Park each measured from 5 to 7 feet high and as many through, trained as somewhat flat-shape pyramids, and each individual bush had from 100 to 250 flowers—not "miserable starlings," but grand blooms, perfect in shape and of great substance, with very healthy vigorous foliage trained down to the rims of the pots.

These Roses it need scarcely be said were the admiration of everyone, and it is possible that any person after being present at such a glorious feast can but be fired with the zeal and determination to go and do likewise? But of these large and beautiful specimens I intend saying but little, for it must be the work of years of laborious attention and painstaking love to attain such size and perfection, and it is only within the reach of a few to possess such giants. My object is rather to refer to the admirable examples of Roses grown in 8 or 9-inch pots as exhibited at the above-named shows, for such plants are within the reach of everyone possessing a glass structure, and who can command a little patience and bestow on them the requisite attention.

The classes offered by the metropolitan societies for twenty Roses in 8 or 9-inch pots are always highly interesting, as it is in these classes the rosarian can often find the greatest perfection of quality. They represent young, fresh, and vigorous plants, and when such is the case good blooms must necessarily follow, and it is also in these classes where the greatest variety of sorts are to be found, and the rosarian can also find some kinds which if he cultivates them out of doors can only expect to have good in occasional and exceptional seasons. Monsieur Lacharme would, I am sure, have gone into ecstasies had he seen the perfection in which Mr. Turner exhibited Madame Lacharme at the Crystal Palace. It was growing in a 9-inch pot, and had from twenty to thirty perfectly expanded blooms with great delicacy of colour and as fresh as the morning dew. No writer to the Journal who has seen the plant alluded to will ever wield his pen to say an unkind word against that fair lady again.

I had written so far before the Journal of the 24th came to hand, and as "W. S. P." wishes me to return to the subject of Roses in pots again, I will carry on my jottings. That "globular ecclesiastic" has been very conspicuous in more than one place this year. Mr. Turner showed it well at the Palace and finer still at the Park, and it surprised me to see how large it had grown, as I had been told it was a bad grower. It is in all respects a good Rose and very sweetly scented, but must, in my opinion, give place to Royal Standard, which is a larger Rose and even more globular than the Rev. J. B. M. Camm. I hope the horticultural societies will retain the class for new Roses, for it was in that class at the Park that the public could see that "wonderful" Triomphe de France, the winner of the prize medal at the Lyons Rose Congress. Here is my opinion of it: A coarser Rose has never been sent out during the last half century; it is of the same flatness as Baronne Prevost, Charles Lawson, Juno, and others of that class; but a friend of mine, who has grown Roses for many years, says it is the old Prince Léon. It resembles a Turk's cap of very large size, and it will surprise me if "WYLD SAVAGE" or anyone else ever sets it up in their first-prize box of twenty-four blooms. Of other new Roses shown at the spring meetings two or three have certainly come well to the front. The Duchesse de Vallombrosa, a very pleasing pink; and a very fine dark Rose named Margaret Brassec. If Margaret Brassec, as shown by Mr. Paul, retains the substance and colour under outdoor culture it will outstrip Charles Lefebvre, and that is saying a great deal.—J. W. MOORMAN.

AURICULAS AT THE CRYSTAL PALACE SHOW.

We have received a long communication from Mr. Dodwell which is occupied chiefly in discussing the merits of a warm or a cool temperature in which to grow the Auricula. As this was not the subject to which our correspondent referred last week, we cannot find room to give publicity to it. As to the difference in the numbers of exhibitors at the Auricula Show, which is the question at issue between "D. Deal," and Mr. Dodwell, the following is the statement of the latter:—"Twelve competed; from Middlesex two, Somerset two, Yorkshire two, with one each from Bucks, Essex, Norfolk, Cheshire, Rutland, and Leicestershire. Of these gentlemen nine contributed Auriculas, and awards were made to eight, as a reference to your report will show—a report, I presume to say, you should have studied before launching such a charge against me; four

contributed Polyanthus (two having also Auriculas), and one miscellaneous."

Whether "D. Deal," has made a mistake of two in the number of exhibitors is a matter of so little importance that there is no need to occupy valuable space in discussing it. There is one remark in Mr. Dodwell's communication which we must notice, as it casts a reflection on ourselves. He charges us with altering the sense of the introductory remarks to his communication, and says, "I used no phrase of brotherly love." We can assure Mr. Dodwell that he did make use of that expression, and his original communication is still in existence for him to see it if he pleases. We must therefore decline to insert communications from one who is so unguarded in his statements as Mr. Dodwell appears to be.—Eps.

OUR BORDER FLOWERS—HONEYFLOWER.

Had the Honeyflower of the Cape been an expensive exotic and required very careful treatment, in all probability it would have been much more frequently met with. Being natives of the Cape the Honeyflowers are supposed to require the protection of a greenhouse or pit, but that is not the case with the subject of these notes. With me *Melanthus* major braves the winter, and though the stems partially die down, its branches freely from the collar and sends up shoots from beneath the surface. When fully developed the foliage is magnificent, and it is a splendid object as a single specimen on the lawn and for sub-tropical decoration where large robust plants are required. *M. major* ought to occupy a very prominent position, it being a capital plant for trellis and wall, and it fills up a gap for indoor decoration where fine-foliated plants are in demand. It delights in a deep, rich, free compost, and the ground intended for it to grow in should be broken up fully 2 feet deep, and some good sandy loam and peat in equal quantities, leaf soil and grit, or charcoal dust, well incorporated with it before planting. The plants require much support, and should be attended to with water in a dry time; thorough drainage must be afforded them. They are of strong habit and require staking to prevent the wind from blowing them about. A group of them in an open space in the shrubbery when fully developed produces a good effect. In the herbaceous border as a back-row plant *Melanthus* major has few equals. Perhaps when better known we shall see it occupying places in our wildernesses and other places, the large, glaucous, pinnate foliage, and brown-coloured flowers having a grand effect. I have not known it ripen seed here, and it is increased by cuttings of the young shoots in sandy loam and peat in a cool pit or frame.—VERITAS.

NOTES AND GLEANINGS.

We have received the schedule of the GREAT SUMMER SHOW of the ROYAL HORTICULTURAL SOCIETY, which is to be held under the large tent at South Kensington on the 19th of June. It comprises forty-nine classes, and from the kind of plants that will be exhibited it will be a splendid Exhibition. The Pelargonium Society will hold their Exhibition at the same place on the same day, and Mr. Bull's cups will be competed for on the occasion.

— THE Centennial Meeting of the BATH AND WEST OF ENGLAND SOCIETY, commencing at Bath on Monday the 4th of June and extending over the four following days, will not only be of special interest as marking an important epoch in the history of the Society, but promises to surpass any of its predecessors in magnitude. The Show yard, more than 40 acres in extent, is situated on the Wells Road, about three-quarters of a mile distant from the Great Western Railway station, and the view of the city and neighbourhood on the way to the Show yard is one of the most varied and interesting to be obtained in any part of England. The horticultural tent will contain an unusually fine display of plants and flowers, contributed by some of the most successful growers in the western and midland counties; and the arts department, in addition to a fine display of Honiton lace, will be enriched by a local loan collection of pictures and articles of *virtù*, of which in the neighbourhood of Bath there are many fine collections.

— THE READING SPRING SHOW which was held on the 24th inst. was a successful one, many excellent collections of plants having been staged, and creditable fruit and vegetables. In the class for twelve stove and greenhouse plants the prizes went to Mr. Mearns, gardener to W. Whitley, Esq., Guildford; Mr. Lees, gardener to Mrs. Marsland, Erleigh; and Mr. Mould,

Pewsey, in the order named. For six plants, Mr. Parham, gardener to G. May, Esq., was placed first, and Mr. C. Higge, Caversham Park, second. In the Orchid classes, Mr. Baskett, gardener to W. J. Palmer, Esq., and Mr. Butcher, gardener to G. Palmer, Esq., were successful. For a group of plants arranged for effect the prizes went to Mr. Parham, Mr. Baskett, and Mr. Lees. The principal prize for Show Pelargoniums was won by Mr. Ashby, gardener to W. Fanning, Esq.; and Fancies by Mr. Baskett, who was successful also for Fuchsias and Gloxinias. Mr. Higge had the chief prizes for Azaleas, Calceolarias, and variegated plants. For table decorative plants Mr. Parham and Mr. Rugman were successful. Mr. J. Mollwick, gardener to Madame Vander Weyer, was first with black Grapes, and Mr. Ashby second; and for white Grapes, Mr. Tegg, gardener to J. Walter, Esq., M.P., Bearwood, was first; and Mr. Wells second. Mr. Bridgeman, gardener to T. Somers Coeks, Esq., had the best dish of Strawberries, and Mr. Ashby and Mr. Tegg were successful with Peaches. Table decorations, bouquets, and cut flowers, including a fine collection of *Marchal Niel* Roses from Mr. Mayo, Oxford, were exhibited. A considerable number of visitors attended the Show, many of whom also inspected the collection of Calceolarias of Messrs. Sutton & Sons, which we are informed are in extremely fine condition.

The first consignment of NEW POTATOES were sent from the Scilly Islands to London on the 25th of May. They were sold to the retailers at from 10s. to 12s. per cwt.

"A VISITOR" writes to us that a distinct and rare *CHELOYNE* (*C. corymbosa*) is now flowering in Mr. Bull's collection. The flower is white with a golden yellow lip, singularly barred with bronzy crimson, and is both curious and beautiful. A fine variety of *Oncidium crispum*, appropriately named *O. c. punctatum*, also attracts notice from its distinctly spotted flowers. *Chysis bracteosa*, *Dendrobium concolor*, and several others are also in beauty. The wonderful display of *Odontoglossum vexillarium*, referred to by our correspondent, has been previously noticed.

MR. PETER GRIEVE of Culford writes to us, "There is a little error in the first part of my paper on garden friends and foes, for which I am to blame—viz., 'feathered justice.' It should have been 'JEDBURGH JUSTICE,' a very familiar old Scotch proverb, referring to the rude times of early border history. Jedburgh is in the district pronounced Jethard, or something like that, hence the little error."

The fine double white *AZALEA INDICA IMBRICATA*, which was first exhibited at Brussels last year and received high honours, is now flowering in the nurseries of Messrs. Veitch of Chelsea. Many of the flowers are quite as double as *Gardenias*, and almost as pure, while a few are flaked with pink, and occasionally a flower entirely pink is produced. The plants are quite small, yet are quite covered with flowers, and the variety also appears to be a free grower. It is a first-class novelty. *Azalea grandis* is also noticeable by its exceedingly large crimson flowers; while the distinct and fine *Souvenir du Prince Albert* continues, and worthily, increasing in popularity. Many Orchids are now in flower in this nursery, including *Dendrobium Brymerianum* with its wonderful golden moss-like lip, and the rare *Cattleya Skinneri* alba.

"A LADY GARDENER" writes to us as follows on PLANTING GERANIUM BEDS—"Last year in planting an oval bed with Amy Hogg Geranium by accident another kind of a much paler pink was mixed with Amy Hogg. Fortunately the mistake was discovered too late to be rectified. The result was a most lovely effect of colour in two shades of pink. The bed was a mass of flower, and the blending of the two pinks reminded one of an *Azalea* in full bloom. Even one gardener, a most bigoted follower of the heading-out system with its orthodox arrangement of colours, was quite reconciled to the mistake. This year all our beds are being arranged on the two-or-more-shades-of-colour plan—scarlet and pale salmon red, deep and pale pink, pale pink and white with pink eye, &c., the plants put in irregularly to avoid all formality. I am sure anyone who tried this plan would at once see the improvement on the masses of hard scarlet and pink so dazzling to the eye in bright sunshine. A person with an eye for colour could suggest many combinations of shades."

A CORRESPONDENT writes to us as follows on the hardiness of NEW ZEALAND DRACENAS:—"It may interest some of your readers to know that one of two large *Dracenas*, known as 'New Zealand Cabbage Palms,' which were turned out of their tubs into the open ground last autumn at Almer Rectory,

Blanford, is now coming into blossom. At present it looks like the flower of a huge *Carex*. The plants were raised from seed about ten years ago sent from New Zealand." The New Zealand *Cordylines* will no doubt survive ordinary mild winters in the south of England, and the partial check which they receive to their growth is likely to accelerate their flowering. The Cabbage Palm is probably a popular antipodal name. The true Cabbage Palm is *Arca oleracea*, a native of the West Indies. The tree grows 170 to 200 feet in height, the "Cabbage" being its terminal bud. It is boiled and eaten with meat, and is considered not only a luxuriant but an extravagant dish, seeing that the removal of the terminal bud involves the destruction of the tree.

THE "Morning Intelligencer," dated June 3rd, 1780, states that two days previously "A PECK OF GREEN PEAS was sold in Covent Garden Market for 6d., agreeable to an ancient custom, the charter being held by the circumstance of selling at that price on the 1st of June." Is the custom still observed?

OWING TO THE WANTON DESTRUCTION of flowers, shrubs, &c., by a pleasure party who visited Lord Stamford's, Enville Gardens, during the past week, his lordship has ordered them to be closed to the public. A number of persons who were found committing the damage were turned out of the grounds at once.

WE regret to place on record in these pages the death of one who during his lifetime was one of our earliest contributors. MR. JAMES BARNES died at Bicton on the 23rd inst. aged seventy-one years. It is more than thirty years since Mr. Barnes commenced his communications to this Journal. His articles were a reflex of the man—pointed and practical, and could never mislead. Mr. Barnes was a man of great perseverance. He was both a great reader and worker; earnest in acquiring information by observation and by experiment. He was equally willing to impart it to others, and the vigour of his personal teaching will not soon be forgotten by many whom he aided to train as good gardeners; and his writings were always read, because they were admitted to be sound. Mr. Barnes was of a "gardening family." His father was a gardener, and brought up five sons to "the craft." Mr. James Barnes had great experience in commercial horticulture, having held important appointments at Chelsea and Brompton in large plant and vegetable-growing establishments there. He paid great attention to crossing Cucumbers, and he raised many improved varieties. During his long engagement at Bicton he was successful in every department. Pines he grew of unusual excellence, and Conifers and shrubs received a large share of his attention, and he was the raiser of *Colletia bictonensis*. He took great interest in promoting a taste for gardening amongst cottagers, and was amongst the first to assist in establishing exhibitions of their produce. He was in fact indefatigable in his calling, and was generally designated as a "fine old British gardener."

A LADY writing to us on BULLFINCHES AND FRUIT BUDS, asks if the late very mild winters have not promoted the increase of insects which the birds search for in the buds of fruit trees, and further remarks that forty years ago when the winters were severe little was heard of the destructiveness of birds, and our trees were loaded with fruit. But bullfinches must have existed then as now. Many buds which our correspondent has examined this spring have decayed in the centre, which she suggests is the effect of insects. Severe frost, it must be remembered, has the same effect on fruit buds. A Sussex correspondent also states that a bullfinch kept in a cage prefers as food "spiders, all sorts of smooth caterpillars, and the green fly on fruit tree leaves; he also eats leaf buds, but when given a bough he always chose a blighted bud first. If gardeners would protect their fruit when ripening, the good our little birds do in spring would counteract the harm they do in summer. As for the titmouse (tomtit) they are the only birds I know that will clear the hairy caterpillar off Gooseberry bushes."

WE regret to announce the DEATH of MR. HENRY MERRYWEATHER, which occurred at The Nurseries, Southwell, on the 17th inst. Mr. Merryweather was a man of great experience, and he was held in much esteem in the neighbourhood. Mr. Merryweather was seventy-four years of age, and is succeeded by his son, the eminent rosiarian.

THE *Irish Farmers' Gazette*, in recently alluding to the HARDINESS OF *CYRANTHERA MAGNIFICA*, states that a plant of

it has been growing for years in the open border in front of one of the houses in the College Botanic Gardens at Dublin without the slightest protection. Each year it grows into a well-finished symmetrical specimen, but fails to perfect its blooms before the autumn. The circumstance is suggestive of turning out young plants into the open ground for the summer months, and then lifting and potting them for flowering indoors. It is a native of Brazil, and is usually cultivated as a stove plant.

— We have been asked if it is true that in Switzerland the law compels every newly married couple to plant six trees immediately after the marriage ceremony, and two on the birth of each child? We cannot answer the question, and refer it to our Swiss correspondent "A. W." for solution. In the meantime we doubt the veracity of the report.

— Mr. ERNEST BERGMAN of Paris writes to us to say that he heard the cuckoo at Ferrieres on the 9th of April.

THE CAMPANULA, OR BELLFLOWER.

WHETHER the plants be employed in the decoration of beds or borders, greenhouses, halls, or windows, this genus is one of the most useful. The flowers are usually blue or white, and are generally produced from June to September. The plants are mostly found in temperate regions of Europe, Asia, and North America.

Amongst annuals *C. Speculum* (Venus's Looking-glass) and *C. Lorei*, and its variety *C. Lorei alba*, are the best, growing from 6 inches to 1 foot in height, and if sown in patches at the front of a border, or in lines round the margin of a bed, they are very attractive; but on dry soils, and if the weather is very hot, their duration is very brief, the flowers seldom lasting good more than three weeks. The seed should be sown in early spring, scattering it thinly and covering very lightly, for the seed of all the species is very small, so that if a thick covering of soil be placed over it, it will be a long time in germinating, and possibly may not germinate at all. If a few pots of *C. Speculum* are sown at the same time and placed in a cold frame, and the seedlings thinned out so as to leave eight or nine plants in a 6-inch pot, a pleasing change will be afforded for mixing with other subjects in a conservatory. Seed may also be sown in September for spring flowering.

The well-known Canterbury Bell (*C. Medium*) is a biennial, and should be sown outdoors in May or June. The soil should be prepared by soaking it with water twelve hours previous to sowing the seed. When the plants are large enough for handling transplant them into beds 4 feet wide and 6 inches between each plant, there to remain until the autumn, when they may be transferred to their flowering stations in the mixed flower border or where wanted; or if the planting be delayed at this time it may be done in March. About five plants in a group look very well. There is an improved form of the old Canterbury Bell (*C. Medium calycanthema* and *C. Medium calycanthema alba*), the calyx being coloured the same as the corolla. These are quite hardy, and should be grown by all who wish to grow Campanulas. As pot plants there are few things to surpass them, and the flowers of this variety last well when cut. The best plan is to pot as many plants as are required in September, the largest-sized plants into 8-inch pots, and the smaller into 6-inch, and give them the protection of a cold frame during the winter months. They will come into bloom a fortnight or so earlier than those in the borders, the larger plants making handsome specimens of pyramidal form 2 feet in height. The smaller will be useful as table plants, and when throwing up their flower spikes liberal waterings with manure water will greatly improve them. This is one of the finest Campanulas grown.

Amongst perennials, of which there are a very large number, I shall only name such as I know to be good, some being very dwarf and having a procumbent habit, and others growing more erect, 1, 2, and 3 feet in height. The size and shape of their bells also vary from the fine and handsome bells of *C. Van Houttei* to the small ones of that dwarf species *pusilla alba*. The Chimney Campanula (*C. pyramidalis*) is an old and well-known plant, its erect style of growth, if on a rockery, forming a very striking contrast with *Sedums*, *Saxifrages*, and other plants. In some parts of the country this Campanula is grown in pots by cottagers with some rivalry. Each tries to excel his neighbour in producing the tallest and most handsome bloom, attending them with the greatest care, some of the spikes of flower being 4 and 5 feet in height, and when at their best, about the end of July or August, a few of these

plants in front gardens or on window sills are very attractive, and will find very few equals. The mode of propagation is by cuttings, which are produced round the base of the plant when in bloom, inserting four or five round a 5-inch pot, placing in a shady spot, and keeping them moist till rooted, then dividing and potting into their blooming pots, usually 6, 7, or 8-inch, according to their strength, and placed in the open air. The main point to ensure a good spike the succeeding summer is to have a good crown of leaves to the plant before winter sets in. They are left outdoors all the winter months except when frosty, when they are brought indoors, to go out again on the return of better weather. The soil is similar to that used for potting *Geraniums* or *Fuchsias*.

Another old favourite for window decoration is *C. gargarica*, a trailing kind with pale blue flowers, very suitable for suspending in a window or as a basket plant. I have found that by potting it in soil composed with half peat the growth is less straggling and the flowers are of a deeper blue. It is usually increased by cuttings or division. *C. carpatia* (blue) and *C. carpatia alba* make effective bedding plants, and clumps of them in mixed borders are very telling, growing from 9 inches to 2 feet in height according to the quality of the soil. If seed be gathered as soon as ripe and sown it will germinate freely and afford blooming plants the next summer; but division in spring is the best mode of increase when a sufficient stock of it is obtained.

One of the finest of herbaceous perennials is *C. Van Houttei*, either for pots for exhibition or for borders. Its large dark blue bells are very handsome. The Peach-leaved (*C. persicifolia*) and its varieties are also good. *C. coronata*, *C. coronata alba*, *C. glomerata*, *C. latifolia*, *C. lactiflora*, *C. nitida alba*, *C. grandiflora*, *C. pubescens*, and *C. aggregata*, are all worthy of a place in the garden, and will flourish well in the open; but if planted near or under large trees the growth will be very poor. When the flower spikes are rising a few neat stakes should be put to those that require support, for rough winds will blow them about and damage them, and if the weather should prove very dry a few good waterings will be beneficial to them in prolonging their season of bloom, and a supply of blue and white flowers at any time is very desirable.

There are a few more species that are worth special attention, their dwarf growth being very suitable for an open rockery or for pots. *C. pusilla* and *C. pusilla alba* are perfect gems, only attaining a few inches in height, but a profusion of bloom. *C. Cymbalaria*, *C. fragilis*, and *C. muralis* are of a procumbent habit. If in pots they flower freely, growing over the pots, hanging down, and completely hiding them; but to grow them well they must have no eodding. Protection of a cold frame in hard weather, dividing and repotting in good loam and leaf soil in February, and plenty of water when required, especially when in bloom, is all they want.

There is another species that is often trodden under foot on commons and waste lands in Britain, growing in solitary patches, and throwing up its humble spike in July or August, often when all the grass and other herbage near it is burnt up with drought, and that is the Harsbell (*C. rotundifolia*). If a few bits of this plant are taken up when in flower, potted, and taken care of, it is surprising what a beautiful object is produced. If grown-on with liberal treatment in 8-inch pots, masses laden with hundreds of bells will be produced from July to the end of September. A few twigs placed round the edges of the pot help to keep the stems erect. It is usually in a wild state about 6 inches in height, but under cultivation it grew 2 feet in height. There are many other species of this fine genus of plants, but all the above-named are good.—A. HARDING.

BULLFINCHES AND SQUIRRELS.

I CAN fully corroborate the opinion that bullfinches are most mischievous in a garden. Will some of your readers tell me the best mode of trapping them, dead or alive? I object to the use of a gun, because the shot often damages trees and plants. Squirrels are arrant and cunning thieves in a garden. I have known them to show great ingenuity and tact to get at wall fruit, carefully avoiding traps on walls and in their track, and then reaching the fruit by stretching their arms through the net. A gardener told me that he could not have believed that they could reach so far if he had not seen them in the act of doing what he suspected some boys to be guilty of. I know by experience that they do great damage to Larch and other young trees, and I also know by experience that squirrels

are uncommonly good when roasted. Hedgehogs may be useful in a garden, but I have twice caught them polishing off wounded partridges under a bush.—G. O. S.

NEW CROTONS.

Few ornamental-foliaged plants are more valuable for decorative purposes than Crotons. Their brilliant colours make

them attractive at all seasons of the year, and their elegant habits render them as appropriate for stove and dinner-table decoration as they are effective for exhibition purposes. The dissimilarity in Crotons is very striking. The foliage of some is bold, smooth, and commanding, while of others it is slender, tortuous, and elegant. The leaves of some sorts are simple, while those of others are lobed, and a few are interrupted, the blade being undeveloped for a certain distance and then



FIG. 55.—CROTON EARL OF DERBY.

expanding, so that it appears like two leaves connected by a string or slender filament, imparting to them a grotesque appearance. Nature appears to play strange freaks with Crotons, and there is not much fear that, however rapidly new varieties are forthcoming, there will be any lack of distinctness, as is the case with Tricolor Pelargoniums and a few other genera of plants. As showing the distinct character of some of the newer Crotons, and also in some measure their varied colouration, the figures of two which we have frequently seen exhibited, and which are being distributed this year from Chelsea and Holloway, are submitted with the descriptions of them as given by their introducers. Both these Crotons may be regarded as first-class decorative plants and well worthy of notice. Both of them colour well when in quite a small state, and they appear to be free and healthy growers.

Croton Earl of Derby (which is a fine companion plant to

C. Disraeli), is described by Messrs. Veitch as a "splendid novelty, with leaves of the C. Disraeli form, very highly coloured, and quite distinct from every other Croton of its class. It was received from A. H. C. Macafee, Esq., of Sydney, New South Wales. The stem during its earlier growth is of a remarkably bright yellow; the petioles, and midribs of the three-lobed leaves springing from it are of the same rich colour, which also spreads over the greater part of the lamina or blades, the extremity of each lobe being green. As the plant increases in age the colour deepens, and finally becomes suffused with red. Thus the ensemble of the plant presents a centre of bright yellow of almost golden hue, with the later growth of a little lighter shade, and the older growth changing to red, relieved by the cheerful green tint of the extremities of the leaves. The habit of the plant is erect; the foliage is of even growth, and gives a symmetrical outline to the whole. It received a first-

class certificate from the Royal Horticultural Society, and a certificate of merit from the Royal Botanic Society on the same day."

Croton Queen Victoria is stated by Mr. E. S. Williams, who is sending it out, as "the first hybrid Croton that has been raised in this country. It is the result of a cross between *C. Weismanni* and *C. interruptum*. It far exceeds in beauty any of the imported species offered up to the present time. It

is of medium growth and free branching habit, a most desirable feature in the formation of good specimens; the leaves when well matured are from 9 to 12 inches long, and about 2 inches broad, oblong lanceolate; the ground colour of the leaf is rich golden yellow, beautifully mottled with green; the midrib and the primary veins are of a rich magenta colour, changing with age to a vivid crimson. The margin of the leaf is unevenly banded with carmine, often extending as far



FIG. 55.—CROTON QUEEN VICTORIA.

as the midrib, and so harmonising with the rich yellow as to produce a gorgeous effect. It has received a first-class certificate."

Some remarks on the cultivation of Crotons will be found in another column.

BLACK THREAD AS A PROTECTION FROM BIRDS.

I HAVE in the past been one of those who have laughed, almost enered, at the idea so confidently set forth by others, that a single line of black thread strung along a row of Peas, or crosswise over a bed of seed, say Radishes, Lettuces, or Broccoli, would prevent birds from committing depredations on the young Peas or seedlings; but though I have laughed I have often tried it and found it right, but I have never tried it

so thoroughly or perseveringly, nor with so good results, as this season. As soon as my Peas were sown, or certainly just before they were ready to make their appearance, I had them strung their whole length with only one line of black thread. To particularise the operation I may say that I cut pieces of split lath 9 or 10 inches long and stuck them into the ground 5 or 6 inches deep the length of the row, 2 yards apart in quincunx fashion—that is, I put one at the top of the row in the middle, then stepped 2 yards and put one on the right-hand side, stepped 2 yards more and put one on the left-hand side, and so on to the end; then with a bobbin of good strong black thread I fastened it to the top peg (half an inch down from the top say), and then strung it to the next, wrapping it round once or twice, and in that way proceeded to the bottom, and by means of this protection I have eight rows

of Peas that are a delight to look at. If I had not done it (no gun being allowed to be fired in the garden) I certainly should not have Peas in the good and healthy state they are now. So, then, instead of being an infidel I am now a true believer in the merits of black cotton as a protection from the ravages of birds.—X.

PERHAPS the following mode of protecting Peas may be of interest to some of your readers who, like me, are troubled with sparrows. As soon as the Peas are visible I insert two short sticks at each end of the row of Peas, and from these I run two lengths of black thread 2 or 3 inches from the ground, so that the birds cannot touch the Peas without coming in contact with the black thread. I have at the present nineteen rows of Peas, and I do not think a single Pea has been touched, whereas before I tried the above method I mostly lost one-third of the crop. I have also found black thread equally useful in protecting young Lettuces in early spring.—W. G.

ORLEANS CLUB FLOWER SHOW,

TWICKENHAM, MAY 25TH AND 26TH.

THE plants were staged in two large marquees in a meadow adjoining the banks of the Thames. The interior of the marquees presented a very pleasing appearance, for banks and mounds had been raised for the plants, and much taste was displayed by Mr. T. Rollinson in the arrangement of the collections.

Roses in pots first claim our attention. The renowned champion growers again exhibited their masterpieces of culture. The meeting between these rival champions is brought to a close, or nearly so, for this season, and Mr. Turner of Slough has in the majority of cases proved himself the victor; but to Messrs. Paul & Sons of Cheshunt much praise is due for the persevering manner displayed to the last, for on every occasion they have run Mr. Turner very closely; but on this occasion they clearly traced the tables on their formidable but friendly rival, and Messrs. Paul were placed first and Mr. Turner second for ten large Roses. The *Juno* in the first-prize collection was perfection and worthy to be classed as one of the best of the season, being a fit companion with Mr. Turner's *Paul Perras* and Edward Morren shown at Regent's Park. The competition in the class for twenty Roses in 8-inch pots lay between Messrs. Paul & Son and Mr. J. W. Moorman, gardener to the Misses Christy, Coombe Bank, and the prizes were awarded in the order named, both collections being very good. For eight Roses in not less than 12-inch pots (amateurs) Mr. Moorman was first with good plants of Charles Lawson, Paul Verdier, Victor Verdier, Céline Forestier, Edward Morren, Paul Perras, Beauty of Waltham, and Marguerite de St. Amand; Mr. Ellis, gardener to J. Galaworthy, Esq., Coombe Leigh, being placed second.

In the nurserymen's class for nine stove and greenhouse plants Messrs. Jackson & Sons were the only exhibitors, and were worthily awarded the first prize. In the amateurs' class for six stove and greenhouse plants Mr. Child, gardener to Mrs. Torr, Gibraltar Hall, Ewell, was placed first. Mr. Legg, gardener to T. S. Ralli, Esq., Clapham Park, was second; and Mr. Ellis third. They all staged good collections. Mr. W. Bates, gardener to W. H. Punched, Esq., Poulett Lodge, Twickenham, and Mr. Child shared the honours for ten Orchids. Mr. Bates's first-prize collection contained two splendid plants of Cattleyas, *C. Warneri* delicata and *C. Warneri* splendens. Mr. Child's were also very good. In the corresponding class for nurserymen Messrs. Jackson & Sons were the only exhibitors, and were awarded the first prize.

Ornamental-foliage plants were admirably exhibited, Mr. Legg outstripping all competitors. Mr. Ley, Croydon, was second; and Mr. Cornhill, gardener to S. Virtue, Esq., Oatlands Park, Walton-on-Thames, third.

Azaleas were both numerous and excellent. In the amateurs' class for eight large plants Mr. Child won the premier honours with grand plants. Mr. Smith, gardener to A. Cooper, Esq., Twickenham, was placed second, the other prizetakers for Azaleas being Mr. Ratty, gardener to R. Thornton, Esq., Sydenham, Mr. Turner, and Messrs. Jackson & Sons. Heaths were not largely represented, but they were very good; Messrs. Jackson & Sons and Mr. Legg sharing the honours.

The Pelargoniums as shown by Mr. Turner and Mr. James, gardener to F. Watson, Esq., Redlees, Isleworth, were very good indeed. In the class for twelve show varieties Mr. Turner was placed first and Mr. James second; and for fancies Mr. James turned the tables and was a good first, staging the best fancies we have seen this year. The varieties were East Lynn, Acme, Princess Teck, Ellen Beck, Reine des Fantaisies, The Sheb, Fanny Gair, and Mrs. Hart. Mr. Dean staged a group of hardy perennials, for which a first prize was awarded. For twelve plants suitable for dinner-table-decoration there were eight competitors. Mr. Wills of South Kensington was placed first, Mr.

W. Bates second, and Messrs. Hooper & Co., Covent Garden, third. For six Ferns Mr. Ley was awarded first, Mr. Smith second, and Mr. Wills, gardener to the Hon. J. C. Vivian, Richmond, third. *Dracema* were well represented. Mr. Bull, Chelsea, was placed first, and Mr. Legg second for splendid collections. *Caladiums* were exhibited by Mr. B. Morrell, gardener to J. S. Rotter, Esq., and Mr. Cornhill, who were placed in the order named.

Messrs. Bull and Wills shared the honours in the order named for new and rare plants of 1875-76-77. Extra prizes were also awarded to the same exhibitors for ornamental groups; to Mr. Wimsitt of King's Road, Chelsea, for a picturesque group, which occupied the centre mound in the large tent; and to Messrs. Webber & Sons for two dozen splendid *Penches*, very fine *St. Michael Pines*, and large baskets of Madrasfield Court and Muscat of Alexandria Grapes. Extra prizes were also awarded to Messrs. Deau, Bates, Wills, Ley, James, Esst, Dick Radclyffe, Mott (for bouquets), and to Mr. Mayo and Messrs. W. Paul & Son, Waltham Cross, for cut blooms of Roses.

STRAWBERRY SIR HARRY.

I HAVE forced many Strawberry plants annually for some years, and have tried some of the best sorts against Sir Harry, but they never did so well as that great cropper. Sir Harry bears heat, sets well, and yields continuously large fruit, which weigh well. It is not an early sort, but comes in about ten days after Koenig's Seedling and President.

In preparing Strawberry plants for forcing the mode of laying early runners in small pots as practised in gentlemen's gardens is probably the best, but in some market gardens this mode is considered too expensive on account of the labour and time involved in carrying it out. In a market garden in this neighbourhood in which two thousand plants are forced annually, from which unusually heavy crops are obtained, a different plan is adopted. The first runners (from the mother plants) are placed so that they can root and grow in the soil till about the end of July, when they are carefully lifted with large balls and potted in 7-inch pots, placed in a sunny spot, where they remain till the end of October, are then wintered and thus prepared for forcing. For five years I have been a witness of the results of this practice. Very strong plants with good crowns are produced, and heavy crops of fruit are obtained from them. Sir Harry is a favourite sort at this place as a second early variety.—A. P.

SPRING GARDENS.

SPRING flowers are now well to the front, and I am the more pleased, for they do us service for many years, as after flowering they are easily removed to the reserve ground until wanted in the autumn. It has been said that we are slow to chronicle failures; it is not pleasant to do so, but is much more agreeable to say we have succeeded. I have jotted down a few plants which have done well this spring and others which have not succeeded, and have learnt a lesson from the failures. First of all we had a fine display of *Aconites* from Christmas onward, with *Snowdrops* and *Christmases* in abundance. These never fail. *Hepaticas* are charming plants for the spring, and have given great satisfaction. *Pulmonarias* are fine now, as also are *Golden Feather*, *Cheiranthus alpinus*, *C. Marshallii*, and *C. ochroleucus*. *Iberis sempervirens* is a mass of white, and *Ajuga reptans* in contrast is very effective. *Muscari botryoides* in masses is very attractive at this season. *Lamium maculatum* is admired: this is an excellent plant for covering an unsightly bank. A bed of *Golden Thyme* just now is grand, and *Daisies* and *Epimediums* in variety are in full beauty. *Sanguinaria canadensis* is a gem for the spring garden when grown in pots and plunged. *Scillas bifolia*, *siberica*, and *amœna* are very fine. The old *Honesty* (of which there is too little) makes a grand bed in spring. *Fumitories* and *Corydalis* are fine, especially *Corydalis nobilis*, *C. albidiflora*, and *C. bulbosa*.

Anemones single and double have done us good service, but *A. fulgens* is the brightest of all. *A. nemorosa plena* is fine for spring and has a prominent place, so has *apennina*. *Arabiæ* are amongst the most effective of winter and spring bedders, and should be in all gardens. *Dog's-tooth Violets* are effective. *Myosotis rupicola* is excellent, and *Veronica speciosa* is a charming little plant—a carpet of white with a tinge of blue. *Double Primroses* in their many shades of colours and *Polyanthuses* have done well, and are now fine, as also are *Anriculas*. *Phloxes verna*, *Nelsoni*, *subulata*, and *frondosa* are among the choicest of our spring flowers. They

are not half so much grown as they ought to be, forming as they do sheets of beautiful flowers. Pansies, of which we need a good share, are now effective, especially Great Eastern, Cliveden Blue, Enchantress, Lothair; and *Violas cornuta* and *Perfection*. *Sedum acre aureum* is a telling plant for edging at this season. *Allium paradoxum* and *Leucojum vernum* are fine spring flowers, and *Aubrietias* in their various colours are indispensable.

My failures are among the hardy annuals. *Alyssum maritimum* is miserable, *Saponaria calabrica* little better; *Silene compacta*, *White Candytuft*, and some of the *Wallflowers* "have proved fickle and inconstant."—ONWARD.

THE DOUBLE-FLOWERING CHERRY.

We have no more beautiful flowering tree in our garden than the double-flowering Cherry—one specimen in particular. It covers a circle of ground 12 yards in diameter, and at the present time is profusely covered with its beautiful white flowers. It would be impossible to place a finger anywhere along the branches and not touch a flower. There is only one drawback to its general acceptance, and that is its flat habit of growth. As a rule the branches grow out almost horizontally, leaving the centre of the tree hollow and flat; and this is a form of growth neither graceful nor pleasing in a tree. A tree should be an object of beauty at all times, even when leafless; but the flat mode of growth of this Cherry robs it of this element of beauty. Notwithstanding that, planters would do well to make a note of it, and not neglect to add a few trees of it when making up a collection of ornamental trees.—X.

CROTONS AND DRACENAS.

The following paper has been read at the Darlington Gardeners' Institute by Mr. Calvert of Woodburn:—

In consequence of the great and increasing popularity of these two classes of plants, both for house decoration and exhibition purposes, I think a few remarks on the more modern varieties and their cultivation will not be out of place. The old varieties of both are deservedly held in great esteem by all growers, but I think the palm is due to those of later introduction. All the *Crotons* and the majority of the *Dracenas* require a stove temperature, which should be 75° at night and 80° by day, with sun 85° during summer months; in winter 70° at night and 75° by day; but if the weather is severe in winter the temperature should be allowed to fall to 65° at night and 70° by day. The soil for potting should consist of one-half good turfy loam, the other half equal parts of peat and leaf soil, with a sprinkling of silver sand. If well-decayed dung in a drishy state is procurable a little may be added. In giving large shifts a few handfuls of crocks and charcoal should be used amongst the soil, and artificial manures may also be used with advantage. The loam and peat should be carefully pulled to pieces by the hands, and the leaf soil used in a rough state. The above-mentioned soil will suit both *Crotons* and *Dracenas*.

The *Croton* is propagated by seed and cuttings, the last-named plan being mostly adopted. In selecting cuttings choose the strongest and best-coloured about 6 inches long, cut off two or three of the lower leaves, and place in the centre of a 3-inch pot. Plunge them into a bottom heat of 85° in a propagating pit, and they will root freely. Cuttings may be taken at any time of the year. After the cuttings are well rooted give them a shift into 6-inch pots, and remove them into the stove. Arrange the plants so that they get every ray of light and sunshine, giving no heed to bottom heat, as I do not think it is of any consequence. After the plants are fairly started into growth keep shifting and staking. As the roots reach the sides of the pots do not allow them to become "matted," as it retards their growth, and I do not think it in any way assists to develop their variegation. The varieties of the *Croton* are very numerous, and some of them, in my estimation, almost useless. My selection of six varieties would comprise *Johannis*, *Veitchii*, *Hookeri*, *Majesticum*, *Weismanni*, and *Queen Victoria*. The last-named is a new one being sent out by Mr. Williams, and from what I have seen of it I have every reason to believe that it will gain as high a place among *Crotons* as *Queen Victoria* has gained among her subjects. Special care must be taken in arranging the plants, as I am fully convinced that it is the want of light which causes so many badly-coloured *Crotons*. The plants ought never to be shaded.

The *Dracena* is propagated by seed and cuttings, the latter plan being mostly preferred. The cuttings will root if treated the same as advised for *Crotons*. The stem and strong roots also root freely if they are cut into pieces about half an inch long and placed in a shallow pan, covering lightly with soil. Plunge the pans into bottom heat, and water lightly until the tops appear. If specimen plants get "leggy" they may be propagated by "ringing," which is done by splitting a pot in halves and placing round the stem where it is wanted to root. The stem should be cut through the centre, and a wedge-shaped piece of charcoal inserted to keep it open. The pot should be securely fastened, which may be done by placing a stake on each side and tying together with string. After the pot is safely fixed place a few pieces of crock in the bottom, and fill up with turfy loam and peat, adding a sprinkling of silver sand. The plants should stand in the stove, where at first they present an unsightly appearance; but it will be fully compensated for by the symmetrical and well-coloured heads, which root in about six weeks. I sometimes cut the stem half way through, and I think they root quicker when they are so cut. After the cuttings are well rooted give a liberal shift, using the compost previously advised. If specimen plants are wanted keep shifting as the roots reach the sides of the pot, and give liberal shifts. If a number of plants are wanted for decorative purposes, and sufficient room cannot be found in the stove, they may be placed in a pit, with a flow and return pipe in it, for the summer months, and returned to the stove to fill up gaps left by *Caladias*, &c. *Dracenas Cooperi*, *terminalis*, *excoles*, *Shepherdii*, *striata*, *gracilis*, and *Guilfoylei* are amongst the best for decorative purposes. The exhibition sorts are very numerous. *Baptisti*, *Youngi*, *Amabilis*, *Shepherdii*, *metallica*, and *excoles* have held the foremost places, but I expect to see them eclipsed by Mr. Will's new varieties.

The stove varieties of the *Dracena* will require shading from the direct rays of the sun during the summer months, or the leaves will get burnt, which spoils the appearance of the plant; the shading ought only to be used when there is danger of burning, as the plants colour in proportion to the amount of light they receive. The syringe should be used freely, or red spider will soon make an inroad on both *Crotons* and *Dracenas*, and it will disfigure them beyond repair. The single jet should be used on the syringe, and the stream broken by placing the forefinger over it; carefully wet all the under side of the foliage, as that (in most cases) is the home of the red spider, and if he is repeatedly wetted he will soon change his residence. Thrips, scale, and mealy bug sometimes attack them, and they should be removed with the sponge and soap water.

The greenhouse varieties of *Dracenas* are not very numerous. *Australis*, *Veitchii*, *lineata*, and *congesta* are amongst the best. They are very useful during the winter months for indoor and conservatory decoration, and in the summer they may be used for subtropical bedding. If used for subtropical bedding they should be plunged in their pots, carefully hiding them; and I do not think there is anything to be found which makes a better centre plant or single specimen than a good *Dracena australis*.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

RESTREPIA ANTENNIFERA. *Nat. ord.*, *Orchidaceæ*. *Lin.*, *Gynandria Diandra*.—Flowers yellow, thickly spotted with crimson. "R. antennifera was discovered by Humboldt on the trunks of trees near Pasto, at an elevation of 9000 feet (French), and it has since been found by several travellers in different localities in New Grenada, between 6000 and 10,500 feet, and in Venezuela. The plant flowered in the cool Orchid house at Kew in January of the present year."—(*Bot. Mag.*, t. 6258.)

CALLIPHURIA SUBSEDENTATA. *Nat. ord.*, *Amaryllidaceæ*. *Lin.*, *Hexandria Monogynia*.—"This is a plant which has been in English gardens for many years, and in the absence of flowers has passed for *Eucharis candida*. Lately it has flowered at several places almost simultaneously, and it turns out to be no *Eucharis* at all, but a near neighbour of the *Calliphuria Hartwegiana* which was figured in the "Botanical Magazine" last year (tab. 6259). The present plant, however, differs materially from *C. Hartwegiana* in the filaments, in which the tooting is sometimes entirely wanting, so that for the botanical systematist it forms an awkward connecting link between the tribes *Amaryllidæ* and *Paniceæ*. The *Eucharis candida*, which was distributed by Mr. William Bull in 1876, and which was figured in his catalogue for that year, is the

true plant so called by Planchon. The present plate was made from a specimen sent by Mr. G. R. Sheath, which flowered in the garden of M. H. Beaufoy, Esq., at South Lambeth in December, 1876."—(*Ibid.*, t. 6289.)

RONDELETTIA BACKHOUSII. *Nat. ord.*, Rubiaceæ. *Linn.*, Pentandria Monogynia.—Flowers pink. "This charming plant was received from Messrs. Backhouse of York about the year 1860, without locality or name, and has been cultivated ever since in the Palm house at Kew, where it flowers freely annually in autumn, but does not fruit. Named in compliment to its introducers, Messrs. Backhouse of York, who can give no information as to its origin, but suppose that it was obtained from their continental correspondent."—(*Ibid.*, t. 6290.)

GLADIOLUS OCHROLEUCUS. *Nat. ord.*, Iridacææ. *Linn.*, Triandria Monogynia.—"The present plant was discovered by the Rev. R. Baur in Trankebar Kaffraria, and was first sent to the Kew herbarium by our indefatigable correspondent Mr. McOwan in 1871. Mr. Baur describes it as growing in grassy places at an elevation of 2000 feet above sea level, and flowering in March. We owe the introduction of it in a living state to Mr. Bull, who imported it from the Transvaal territory and flowered it last autumn."—(*Ibid.*, t. 6291.)

AGAVE (LITTEA) SARTORII. *Nat. ord.*, Amaryllidacææ. *Linn.*, Hexandria Monogynia.—Flowers yellow. "It was first introduced to the Berlin botanic garden by Dr. Rohrbach about 1850, and has since been received from the district of Orizaba, in Mexico. Our first notice of its flowering is by Dr. Schmitt-palm in 1857 in the 'Zeitschrift des Gartenbauvereines zu Darmstadt.'"—(*Ibid.*, t. 6292.)

PEARS—Amiral Cécile and Beurré de Jonghe.—"Two little-known winter Pears, of excellent quality—so good indeed, that they may with propriety be added to any collection in which they do not already exist. *Amiral Cécile* (Boisbunel).—This fine Pear, which is of Continental origin, and is comparatively new, fruited for the first time some five years ago in the gardens of the Royal Horticultural Society at Chiswick, where it is much esteemed. It begins to ripen shortly after Christmas, and continues in use until the end of January. For a Pear ripening at that season there are few to equal it, the flesh being as melting and juicy as any Pear in the month of October, and of an exceedingly rich and luscious character. It may be thus described:—Fruit rather below medium size, roundish or oblate, a good deal flattened at the eye, which is wide and open. The skin is dull green, changing to a reddish-lemon colour as it ripens, with patches of russet round the eye and stalk. The stalk is short; the flesh is very buttery and melting, slightly tinged with pink, extremely rich and luscious. The tree forms naturally a handsome pyramid; it succeeds well on the Quince, and is an abundant bearer. *Beurré de Jonghe* (Gambier).—This is another comparatively new Pear, dedicated to M. de Jonghe of Brussels: a late one also, and one of very great excellence. The Rev. G. Kemp first submitted examples of it to the Fruit Committee in 1875, when it was unanimously awarded a first-class certificate. It is a Pear that seems well suited to the climate of this country, which very many of the Belgian Pears are not. The fruit is of medium size, of a true pyriform shape, very regular and even, tapering to the stalk, which is short and fleshy, inserted a little on one side, and always having the appearance of having been broken off. The eye is small and open, nearly level with the surface of the fruit. The flesh is greenish yellow, very buttery and melting, with a fine rich flavour, and slightly perfumed. This fine Pear ripens during the month of January, and is equal in flavour to the best of the earlier varieties. It is a valuable acquisition, and ought to be in every collection."—(*Florist and Pomologist*, 3 s., x. 61.)

APPLE—White Winter Calville.—"We have in this one of the handsomest and best of Apples—one, moreover, which can be depended on as a valuable dessert fruit in the winter season, since it may be placed on the table in good condition from about Christmas until Easter. There is a peculiar delicacy in the tender melting flesh and grateful aromatic lemon flavour, almost making one fancy while eating a fruit which has just arrived at a fit condition, that he is taking a lemon ice while sniffing the flowers of *Magnolia grandiflora*.

"This Apple is very successfully cultivated at Trentham by Mr. Stevens. It is grown in pots, which are stood at intervals along the long ranges of Peach cases, which cover so large a proportion of the garden wall at that place. They have, therefore, virtually orchard-house treatment, and well they repay all the advantages which are accorded to them. One of these pot-grown trees was produced a few weeks since at South Ken-

sington, showing the crop it had matured last season, and as an example of successful management was voted a cultural commendation. The fruit is of large size, with broad unequal ribs extending from base to apex, where they terminate in prominent ridges. The skin is of a pale delicate yellow hue, becoming when fully matured a bright golden yellow strowed with brown dots. The eye is small and closed, with pointed segments, set in a deep-ribbed basin; the stalk is three-quarters of an inch long, slender, inserted in a deep angular cavity lined with russet. The flesh is yellowish white, very tender and delicate, full of juice, with a lively aromatic flavouring of lemons. It is not only an excellent dessert fruit, but is also adapted for all culinary purposes. This variety is much recommended as a cordon on the French Paradise stock, for which and for pot culture it seems better adapted than to be grown as a standard tree."—(*Flor. and Pom.*, 3 s., x. 73.)

TABLE DECORATION.

THERE is no better way for growing *Lycopod* for table decoration in winter than placing it in the open air in a sheltered place—no matter about the sun shining on it provided it is kept thoroughly moist, and growing in a moist sheltered position. In the open air it forms a dense, stiff, dark green cushion which will in winter stand a deal of hard usage. We have found it stand four winters in the open air without protection, except the shelter of some evergreen shrubs amongst which it was growing. Plenty of this *Lycopod* may, therefore, be grown with little trouble in pots, pans, boxes, troughs, or planted out; if planted out it lifts easily in dense patches without feeling the disturbance. We have found small shallow troughs of wood very handy for getting it up in quantity, with a thin mass of confined roots, easily applied to the carrying-out of any idea. Long narrow strips of troughs about 2 inches wide by 1 inch deep, when filled with a little rich soil and planted thickly with the *Lycopod* and grown into a compact green mass, answer well for way lines on the table; the moss can be turned out of the little troughs and placed on the table-cloth roots downwards; of course the strips of moss can be bent into any shape desirable, surrounding the base of candelabra or other ornaments, and will form the base in which to insert flowers or sprays of Fern. Or troughs made of tin, of any conceivable shape, 1½ inch by ¾ inch, may have the *Lycopod* grown in them, to remain and to form a groundwork for cut flowers of all sorts; the dark green *Lycopod* harmonises with any colour. These tin troughs are best made in straight pieces, right angle pieces, or arcs of circles of various sizes; indeed there is no end to the extravagant devices which are and may be made with those things in variety; which, after all, are toys and bordering on the ridiculous, but which are serious trifles to the gardener when the consumption and waste of flowers are taken into account.

The filling of vases or shallow glasses with cut flowers for table decoration is often a puzzle to some, even supposing the flowers are plentiful. Given a shallow dish and a certain amount of eatable flowers, how to begin? It is in this, as in bouquet-making, or anything else; first conceive an outline of a plan in imagination to work by; and the thing becomes easy. Bold flowers are always the best for table decoration: such as Lilies in summer, or Amaryllis, Poinsettias in winter, *Camellia elegans* or forced Tulips; a few of those to form the skeleton of the plan gives a base from which to work at once, inserting them widely apart, filling up with sprays of minor flowers, Ferns, and Grasses. Smaller flowers of *Camellias*, such as *variegata*, make good margins for a basket of flowers; or *Euphorbia jacobinæiflora*. And few things, common or choice, can match the *Fuchsia* when to be had. *Rhododendrons* are stiff in the solid trues as cut flowers, but when broken up into single pipes they make neat margins for cups of flowers or *sperges*, or when wired or tied on pieces of *Privet* or other twigs with a bit of Fern, the single flowers of the *Rhododendron* are very workable and telling. In making up any composition of flowers for the dinner-table stiffness should be avoided. The Chinese *Primula* always looks well with candle-light, and it must be tied on twigs of some sort to make it stand up; the same applies to many other common things, such as Tulips, *Gesneras*, *Gloxinia* flowers. In making up dishes of flowers from day to day, of whatever shape, for table decoration, there is no better medium in which to insert the flowers than pure white wet sand; the colour is not offensive when used in glass, is always clean, and it is sufficiently stiff to hold the stalks of flowers in position.

When water is used it is difficult to carry out a tasteful arrangement without some stiff base being first inserted into the water, such as sprigs of some evergreens, as Laurustinus or Sweet Bay. Common moss is a clumsy material in practice for a base, however much in theory it may have to recommend it, and its use is often insisted on by employers. Wet sand can be trimmed into any form of surface, flat, globular, or pyramidal to suit any dish, and the building-up of a graceful and showy decoration with suitable flowers is easy. In carrying out varieties of decorations night after night a general plan should be conceived for each occasion, and to work with the style of plate to be used; for instance, light-coloured graceful things might be used together for variety, such as *Centaurea jacobinica* variegata, *Pandanus Veitchii* or *P. javanicus* well grown as standards; *Cyperus alternifolius* var., with which might be associated tall slender grasses of cut flowers lightly and gracefully done with light material.

Again, there is such a variety among *Dracenas* that they will give an effective change by themselves. The long linear leaves of *indivica*, the striped *Guilfoylei*, the striped and dignified *D. regina*, and the many varieties of red-leaved sorts, are all specially adapted for the table.

Among Palms alone variety is endless, and almost all are suitable; different shades of colour and habits exist among *Arecas* alone, also among the *Chamedoreas*, *Thrinax*, and the *Cocos* family.

Small healthy seedling Ferns in thumb pots are indispensable for working into detail, such as tracery on the table-cloth, imbedded in scrolls of *Lycopod*, as alluded to before, or to work into little pyramids at salient points, or for surrounding the bases of vases or other ornaments, or for inserting into little cups or glasses to be distributed for variety about the table. These, alternating with similar cups or glasses, filled with cut flowers, have a neat and tasteful effect round the table near the margin, under the eye. Large Ferns are not, as a rule, very workable for table decoration, unless of the Tree Fern section. The most of these when young are admirable, such as the *Cyathea*, *Alophila australis*, and the tender-stemmed *Lomaria*, and *Dicksonia squarrosa* in the young state.—THE SQUARE'S GARDENER (in *The Gardener*).

NOVELTIES IN THE ROYAL GARDENS, KEW.

An interesting selection of tuberous *Aroides* is flowering in the Heath and Mesembryanthemum house at Kew. The newest of these is *Proteinophallus Rivieri*, better known under the generic name *Amorphophallus*, but from which it differs in many important particulars, possessing, however, the same kind of leaf. It is supposed to be quite hardy, though in any case it is very desirable for subtropical gardens, a use to which it should be applied if obtainable even in small quantity. The several species of *Amorphophallus*, from their highly tropical appearance, could also be used with great effect. The petiole of *Proteinophallus Rivieri* grows quite erect and reaches a height of 18 inches, supporting a much-divided circular blade 2 feet in diameter. The flowering stem reaches a height of nearly 3 feet. The spathe forms a convolute tube, spreading above into an orbicular limb, which may grow to a circumference of nearly 4 feet; its colour is a dull livid purple with green lustre. Above this the somewhat cylindrical appendix of the spathe is extended considerably, and is of the same peculiar tint.

Arisæma speciosum is one of the most ornamental of its genus, partly from the deep purple spathe with white lines, but also from the dark green leaves which are margined with blood red, a feature by which it is easily known. The spadix is provided with a wonderful flexuous tail, which trails on the ground; by its means it is supposed that wingless insects reach the flowers and so bring about their fertilisation. It is nearly if not quite hardy, and may be grown in a cold frame. Another pretty species is *A. concinnum*, having a pale green spathe marked with white lines, and leaves with narrow segments which radiate in all directions. Of less interest than these is *A. helleborifolium*. As one of the group we notice the new yellow-flowered *Pelargonium oblongatum*, which, though distributed for hybridising purposes, does not seem yet to have given any result.

A fine specimen of *Aponogeton distachyon* grown in an inverted bell-glass is just passing its best. According to an article in the "Revue Horticole" by M. Carrière, it is possible to cultivate this plant successfully as an ordinary pot plant without immersion in water. A trial of this method has not

given very satisfactory results either in appearance or vigorous growth. The leaves float under natural circumstances, but in this case require support as well as the flower stems, so that the characteristic effect of the plant is almost entirely lost.

The peculiar flowers of *Heterotropa asaroides* may now be seen. They sit on the surface of the soil, are in shape like an urn, equal a walnut in size, and are of a strange black-purple colour. The leaves afford an instance of plant-mimicry by taking the form and general appearance of *Cyclamen*.

The true *Encharis candida* is flowering in the *Begonia* house, and is truly an elegant plant; it is apparently also very floriferous. About nine flowers are borne in an umbel: they are smaller than those of *E. grandiflora*, but with pure white colour and gracefully recurved segments are equally beautiful. That usually grown under this name is *Calliphruria subedentata*, which rarely blooms and is much less beautiful. *Torenia Fournieri* is a recent and extremely pretty addition to English gardens. It much resembles *T. asiatica*. The flowers are smaller but have the addition of a golden blotch, and it has the advantage of a more shrubby habit.

In the Victoria house are two fine young plants of *Castilleja elastica*, the Cañahuate Tree of Central America. This plant is of great interest from its peculiarity of detaching the lateral branches from the main stem at the point of insertion, which detachment takes place in order from below upwards as height increases. They are separated in the same way as a leaf, and the fall is apparently governed by the same conditions. In due time the fruiting branches are produced, which are not deciduous. In some other plants, as in *Phyllanthus*, the flowering branches are deciduous, and so closely resemble leaves as to have been described as such.

Among the Orchids are several of rare interest and beauty. Exquisite in colour, almost without rival, is *Phalenopsis Lindemanniana*. *Dendrobium barbatulum* is a pure white, and until recently, very rare species. The fine varieties of *Cattleya Mossii* which before have excited attention are again coming into flower. *Cologyne ochracea* is a rare though very select species; the flowers are of moderate size, pure white, with a golden blotch on the lip edged with orange. A small plant of *Madevallia Veitchii* is extremely well flowered, having seven strong spikes. *M. Peristeria* has peculiar orange flowers with brown spots. *M. inocharis* is one of the prettiest of the small kinds. The sepals form a campanulate tube, pure white except near the bottom, where blotched with rosy lilac; the tails are pale yellow.

In the Conservatory may often be found many effective plants which are rarely, if ever in some cases, used for purposes of decoration. *Veronica Hulleana* is extremely beautiful at the present time, and is quite distinct from any other in cultivation. It bears a profusion of pale lavender flowers in large panicles, and the stems though long are so flexible as to form with a few ties the most perfect specimen. *Arctotis grandiflora* is a fine old shrub of *Compositæ*, and bears immense flowers in colour resembling *Gazania splendens*.

Darlingtonia californica is just now of particular interest from its flowering out of doors, where it has been for the last two years, with only the protection of a bell-glass. It is in one of the recesses at the rockwork, where it was placed when quite a small plant, and has ever since grown with the best health and vigour. It has now about fifteen leaves, the largest of which is 7 inches long. The flower stem about equals it in height. This plant has been grown in a pot plunged to the level of the ground, and the bell-glass has been so fitted that while admitting a little air the internal moisture could not dry up.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

We have been looking over the fruit trees. Some kinds have borne up bravely, while from others all the blossom has dropped off; and it has just struck us that if correspondents would look over their trees and send notes to the Journal of those which have set their fruit best under the influence of frost, they would confer a great boon alike on gardeners and amateurs. For instance, take a row of pyramid, bush, standard, or espalier trees alike unprotected, and give the names, with the effect of the frost upon them. At Loxford there are four Cherry trees in a row; first comes the old Kentish which has an abundant crop, May Duke has none, Governor Wood has set its fruit freely, Black Eagle set very badly, and they were all in flower about the same time. Cherries and Pears on the walls have set well,

Pears and Plums very badly. The weather is not at all favourable to the setting of Apples which are now in flower, but we hope if the nights do not become colder that a sufficient number will set for a crop. The weather is still very cold with east and north-east winds blowing.

It is now time to look over *Vines on walls*. The shoots have grown sufficiently to show which are the best bunches, and the sooner unproductive growths are removed so much the better for those that remain. We continually advocate thinning-out the growths of all fruit trees annually, and the same on walls out of doors are not exceptions to this rule. The best variety of out-of-doors Grape is the Royal Muscadine, and it succeeds on even low walls, bearing good crops of fruit; but to succeed with it the Vine must be furnished with a few young growths from the base annually, and the stronger the growth made by these so much more freely will they produce fruit, and the bunches will also be large in proportion to the strength of the canes. Weakly growths from closely spurred-in old canes seldom produce any fruit, and when this is the case the best plan is to cut them down to the base at once. We have looked over a few of the wall trees which are bearing little or no fruit, and find that they are making much young wood; we stopped and removed all lateral growths according to instructions previously given for this work.

VINERIES.

Fruit is colouring very well in the earliest houses. Black Hamburgs usually colour best in dull weather and when the fruit is pretty well shaded by the leaves. White Grapes require opposite treatment, exposure to the sun causing the fruit to take on that amber colour so much esteemed in well-grown specimens. Much attention is required in the latest houses where the Vines have started without artificial heat. In one house the fruit is set, and in another the blossoms are opening. The temperature ought not to fall below 70° at night in the Muscat house, and 65° in that devoted to those sorts requiring the heat of a Hamburg house. Tying down and stopping the lateral growths must be continued as they require it. One seldom sees the growths trained as they ought to be—that is, regularly over the surface of the trellis, and all at one angle from the main rod. Every growth ought also to be trained under the wires. It requires some care to do this, but it can usually be done. Stop the growths when it is necessary, taking out the tips of the shoots an inch or two in length.

After the fruit is set in any house the shoots will have grown sufficiently to be searched, if it is intended to do this. We have inarched Gros Colman on the Muscat of Alexandria by way of experiment. The Muscat is a good stock for many different sorts of Vines, and we fancy that it will do well for this variety, especially to improve the flavour. We have heard it stated several times that it matters not what stock is used, as the roots are just what the leaves make them; this opinion we cannot endorse, as it has again and again been proved that the roots have considerable influence on the stock. Gros Guillaume (Barbarea so called) is a bad stock. Lady Downe's is not a good stock either for some sorts of Vines. We prefer Black Hamburg and Muscat to any other. When the growths are of the same thickness a slice ought to be cut from each to the centre of the pith, and when the two are fastened closely together the union is often so perfect that it is difficult to find the place after two or three years' growth. The union is never so perfect when the wood is brown and hard before the operation is performed. After a period of dull cold weather Vines often suffer with a sudden change to warm sunny days. The ventilators ought to be freely opened to prevent the scalding of the leaves, and the check to growth sometimes brings quantities of red spider.

CUCUMBERS AND MELONS.

The value of heated structures for these has been fully proved this season. Notwithstanding the cold both Melons and Cucumbers have done well in heated houses, but they grew very slowly in frames, where they could only be induced to progress freely by supplying fresh linings as the others became cold. This may still be done by merely turning the old linings over and adding fresh stable manure or leaves to it. Overwatering is to be avoided. Plants in frames are not likely to become too dry, as they are kept in the heat is kept up from hot-water pipes. While the weather continues cold and damp it will not do to water the plants at night; better do it in the forenoon, closing the frames early, say about three or towards four o'clock, as the sun may be shining or not, and covering the glass with mats to retain the heat. We pinch and train the growths on Cucumber and Melon plants in frames, and in houses very much in the same way as is done with Vines, and it is equally important to pinch early to prevent overgrowth. Melons trained to trellises may have the fruit supported in some way before it is nearly ripe, else it will drop to the ground and may be injured.

GREENHOUSE AND CONSERVATORY.

There is a difficulty at this season to find room for all the occupants of the greenhouse, and those who grow a little of almost everything in a small space have their inventive energies

sorely taxed to do justice to all their plants. Plants do not look well if they are not placed so close to each other that the stage underneath does not show conspicuously through amongst the flowers and foliage; and, again, many Cape and New Holland plants ought not to be shaded from the sun unless it shines unusually fierce. But what becomes of Azaleas, Pelargoniums, &c., that are in flower if they are subjected to the same treatment? To grow hardwooded plants well there ought to be a special house for them when they are removed from the show house and also before the flowers open, and if possible it ought to be in two compartments, as some specimens require much more air and less heat than others. As the flowers of Azaleas, Heaths, and other plants of this nature fade they ought to be removed at once, as nothing is so untidy as decaying flowers, nor so injurious to the plants as to let them remain on after they have faded. We have been tying and training different species of hardwooded plants, and looking over them carefully to detect any trace of red spider or mildew; both are very troublesome. Amongst greenhouse plants in flower at the present time may be named *Hedroma tulipifera* and *Pimelea spectabilis*. *Hovea Celsii* is just over, but its peculiar deep blue flowers are continued by those of *Statioe profusa* and *S. Holfordii*. *Ericas* of sorts are extremely elegant, and the flowers of many of the species, including such as *E. verticosa*, *magnifica*, *E. v. Bothwelliana*, *E. v. grandiflora*, *E. v. rubra*, and *E. Cavendishiana*—always such a conspicuous object at flower shows—are very useful for cutting, the small sprays being charming when placed in small glass vases. There is quite a wealth of flowers of this class just now, but we will only name three more—viz., *Boronia elatior*. This fine species we feel inclined to place at the top of the list; its deep rose flowers are elegantly placed on slender stalks, and are very pretty amongst the finely divided leaves. *B. pinata* is an old favourite not so much known as it ought to be, and is one of the best. *B. serrulata* makes a very neat compact bush, and is quite worthy of being named with the other two. All the three species are well adapted for exhibition and are beautiful in the greenhouse. As we write this the weather is much warmer, and more air can be left on the greenhouses at night. Except tying-in a few plants and re-arranging others on the stage we have not done much other work in this department this week.

FLORIST FLOWERS.

Tulips are in full flower with us, indeed many blooms remain open at night, a sign that the petals will soon drop. Except shading from the sun and protecting from frosts at night no other attention is required. Pinks will be the next to flower, and sticks must be placed to the apices as soon as possible. The beds ought to have been manured with decayed manure, but it has been neglected. Carnations and Picotees are doing very well, as until the middle of May the pots were protected with glass lights. With fine weather they will grow apace, and the flower stalks will require fastening to the sticks as the plants advance in growth. We have finished potting the Auriculas, both show varieties and Alpines. All such work ought to be done in good time; we seldom have any to do after May. Good turfy loam about four parts, leaf soil one part, and a little cow manure was the potting material used. No plants are potted into pots larger than four inches in diameter. The pots are well drained, and the compost is pressed in firmly with the fingers. A recent writer in the Journal (Mr. Bullock) has given very good instructions for potting Auriculas.—J. DOUGLAS.

TRADE CATALOGUE RECEIVED.

Ewing & Co., Royal Norfolk Nurseries, Newmarket, Norwich.
—Descriptive List of Clematises.

TO CORRESPONDENTS.

** All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

ROSES (T. S.).—The lime placed on the surface of the soil for the purpose you name will not injure the Roses, but we should occasionally use root instead of lime, which would be beneficial to them.

BEAUTY OF GLAZENWOOD ROSE (C. H.).—The bloom sent is Fortune's Yellow, which occasionally produces flowers like that with rose. Disappointment would not have been caused had not the Rose been sent out under another name. It is a distinct and attractive Rose.

ADIANTUM FARLEYENSE (T. R. M. E.).—The frond sent is very attractive, and in excellent health. Has the plant received peculiar treatment?

ROSES DYING (A. S. O. R.).—Probably the roots became dry during removal, and you did not prune the heads sufficiently closely. You cannot do more than keep the soil moist and remove all suckers and Briar buds as they appear on the stems. If the wood is not shrivelled do not destroy the bushes.

ROSE NOT OPENING (E. S.).—We think a lack of vigor is the cause of the flowers of your Duchesse de Orleans Rose not expanding. The stem of the bud is very green, and the leaves are healthy. We would advise you to give more generous treatment since the later blooms will expand. Perhaps you did not prune sufficiently close.

ROSES BLOTTED (J. S.).—The leaves appear to have been injured by the cold dull weather, in addition to which there are traces of black fungus. Give the trees a thorough syringing with soft water—one peck of soot to four gallons of water, syringing well and adding a pound of soft soap every gallon. Strain before use, so that any particles of dirt may not clog the syringe or engine. In addition to that afford liquid manure to the roots, and if given a few degrees higher in temperature than that of the soil all the better, yet not exceeding 10° higher.

RABBITS IN A GARDEN (Old Subscriber).—The only remedy against the ravages of the rabbits is to fence the garden that is open with wire netting 2 feet 6 inches high. Unless the space is very great the expense will not be much.

MANAGEMENT OF CANNAS (M. B.).—If the roots of your plants are fresh we should plant them out in June even if but little top growth was made. They are not increased from cuttings, but from seeds, sowing them in warm beds for a few days, and then sowing in brick heat early in the spring, growing the plants under glass for a time until they are large enough to be planted out when the weather is suitable. In the autumn they should be potted and kept moist until the foliage decays, then withholding water, but not permitting the soil to become dust-dry, placing them so as to be secure from frost. In the winter they should be kept in a cool airy place all the winter, covering the surface thickly with manure. Thus managed they grow luxuriantly year after year. If your plants are dead (which we doubt) you had better sow some seed without any delay.

CARNATIONS, PICOTEES, AND PINKS (C. R.).—The Carnation has the marks on its petals from the centre to the edge, and through the edge in flakes of bright colour. The Picotee has the same marks, but generally to the outer edge of its petal. A Pink is altogether a smaller flower and plant. The centre of each petal should be white surrounded with a coloured lining, and beyond this lining a clear smooth edge of white.

ARRANGEMENT OF FLOWER BEDS (Mlteracy).—We should prefer a different arrangement. Let the four corner circular beds remain, and between them the Picotee lawns form four oblong beds with semicircular ends, and in the centre form a larger round bed. This simple arrangement would be much more in keeping with the architecture of the house than the design you have submitted to us, and the five round and four oblong beds could be effectively planted. Do not crowd the beds too much, but allow plenty of light between them.

PLANTING ASPARAGUS AND SEAKALE (West Coast).—You may now dig up portions of the roots of Seakale and cut them into sets and plant them as recently described in the Journal, but we should not advise you to destroy your old plantation so late in the season. You can obtain sets without destroying or seriously injuring the old plants. Asparagus should be transplanted just when the leaves are coming in, and generally to the northward, not except in very late districts. The roots must not become dry during their removal. Your other inquiry will be answered next week.

INSTRUMENTS FOR DRESSING FLOWERS (R. J. L.).—Mr. Rad states that they can be procured from Mr. B. Simonte, Dugh Bank, Sheffield, whose instruments are the best he has seen for the purpose.

ADREN'S-TONGUE (Constant Reader).—The botanical name is *Ophioglossum vulgatum*.

PERUO ACACIAS (C. D. W.).—The two trees are the same. Ask your nurseryman to send what you require. If he has not the seed in stock he will procure it for you.

PROPAGATING COLEUSES (S. J. W.).—Cuttings strike readily at any period of the year when they can be obtained, placing them in a propagating house or hotbed, such as a Cucumber frame, where there is a bottom heat of 80° to 90°, and a top heat of not less than 70°. They require to be inserted in light sandy soil, kept moist, and shaded for about a week until roots are emitted. There cannot be a better time than the present for inserting the cuttings.

VINE LEAVES SCORCHED (J. A. H.).—We cannot perceive any signs of fungus, but we should as a precautionary measure advise you to keep the atmosphere of the house a little drier, especially as you do not employ fire. If you had you used moist earth and pressed the leaves on to the vines would not have been so encoiled and prone to scorch. A sudden outburst of sun after a term of dull weather has promoted excessive transpiration—that is, the foliage of the Vines has given off moisture disproportionate to the supply by the roots. This implies also deficient root-action, which is the cause of the scorching of the soil on complain. As the temperature of the soil increases new roots will form with increased freedom; and in the meantime, if the scorching continues, sprinkle a little thin limewash on the glass with the syringe until the foliage can endure the full sun. Examine the roots and see if they are healthy; if they are not working freely, the soil will need renew it immediately after the crop has been cut in the autumn.

PLANTS FAILING (A Yorkshire Reader).—Deficient heat and fumes from the newly-painted pipes are probably the cause of the failures.

MALFORMED TULIPS (F. Frodsham).—It is a most unusual occurrence that many of your bulbs should produce five flowers and that four of them should be on one stalk! You ask, "What is the cause and how to cure?" We think you too need not be so anxious, and we cannot suggest any other; if you place the manure at least 6 inches below the ground, and plant your bulbs in terry loam without any manure.

ORCHIDS FOR COOL GREENHOUSES (J. D.).—What are usually termed cool Orchids are *Misleyalliana*, *Oncotostomus*, &c., from the Andes of Peru and the mountainous districts of New Grenada, but they require in fact a temperature of 50° to 60°, and are best suited for a cool greenhouse. You must grow *Cypripediums* acule, *Calceolus*, *pubeosens*, and *pectinatus*; *Diss. grandiflora*, *Orchis foliosa*, and a few other sorts. These are sure to do well.

ALAMANDA NONLIS NOT FLOWERING (Eight-years Subscriber).—The best treatment is to cut the plants back in the spring and grow them on in a

temperature of 70° at night at this time of the year. Pinch the growth once or twice during the season. Your plant may yet flower in August if you give it a sufficiently high temperature.

SELECTION OF BEGONIAS (Idem).—*B. Boliviana*, *B. Chelonii*, *B. Dige-welliana*, *E. fuchsoides*, *B. intermedia*, *B. nitida*, and *B. Weltoniana*.

PLANTING FLOWER BEDS (Paragon).—With the exception of staling that you have *Perrilas* and variegated *Grass* you name no other plants. The *Perrilas* we think will be too numerous in the position you assign for it. It would be relieved by yellow *Calceolarias*, Golden Feather, or white *Stocks* and *Asters*, all of which would do well in a cool and partially shaded position, so also would all *Ageratum*s.

CALCEOLARIAS DYING (Constant Subscriber).—Deficient root-action is the principal cause of your plants dying. The soil is not good enough, or watered too much, but the result is the same. They are also attacked by insects. *Calceolarias* require a cool moist atmosphere to preserve them in a healthy state. The fruit set is the small Pear-shaped *Goose*, and is very ornamental.

RHODOENDRONS AND ROSES INJURED (M. R.).—We do not think that mice have committed the injury. An insect is the culprit; probably a weevil of some kind.

DESTROYING EARTH NUTS (In a Fix).—Since the bank is so large and the plants of *Bunium hexocornis* are so numerous, we can only advise your mowing off the tops as soon as you perceive them. If this is done frequently the roots will decay; at any rate if the plants are prevented flowering the boys will not be attracted by them and destroy the tort by searching for the roots.

DOBBIE POLYANTHUS (W. M. B.).—The flowers sent to us were so much dried that we could not judge of their merits. They appear to be very double. Preserve the variety, and send us fresh flowers another year.

STATICE HOLBORNI (J. H. E.).—The plants are suffering in consequence of the atmosphere being too close and moist. Avoid having the foliage wet when the sun's rays fall powerfully upon the plants. *Statice*s require a light airy position, and should be carefully watered, avoiding making the soil sodden, and yet giving a good supply when the plants are in free growth. They should be potted when fresh growth takes place, having been kept rather dry over the winter. A compost of three parts of light fibrous loam, one part of turfy peat, half a part of leaf soil, and a half part of equal good peat, broken up and mixed together, and a few shovels of dry loam well incorporated and used rather rough, potting firmly, and providing good drainage, with a light well-ventilated position in a greenhouse, will grow the plants well.

LILY OF THE VALLEY OVERCROWDED (R. G.).—We should supply the plants with liquid manure liberally during dry weather, and in November cut the plants, selecting such as have good crowns for forcing. The plants may be raised about an inch apart, and forced as usual. The soil should be light, and the plants should be planted in the bed, leaving clumps about 6 inches across, leaving space of that width all around them, and manure well. The plants removed may be planted out in well-manured beds 1 foot apart every way, in little clumps of about 6 inches in diameter, and crossed with an inch deep with some thoroughly decayed manure or leaf soil. In planting the crowns should be just level with the surface. After being planted two years the clumps will be in good order for lifting or forcing.

DEUTZIA NOT THRIVING (G. M.).—The plant would be best planted out in good rich light soil in an open yet sheltered position, and this we should do at once, and covering the plant down to within a few inches of the soil; or if you wish to keep it in a pot you may shift it at once into a pot a size larger, using a compost of light turfy loam enriched with a fourth of well-decayed manure or leaf soil, and place it outdoors in a sheltered situation on ashes. It would, however, be best to plant out on a weakly place.

LEAF AND LEAVES SCORCHED (R. E. P.).—From the atmosphere being kept too close and moist should attribute the injury to the foliage. More air and fresh watering at the roots would probably afford a remedy with a light position. The plants should not have the sun's rays fall powerfully upon them whilst wet.

APPLYING ARSENIC TO GRAVEL WALKS (H. A.).—It would be dangerous to use arsenic upon gravel walks, to which form they have access. We have no experience of carbolic acid for destroying weeds.

CULTURE OF CALLA (RICHARDIA) ETHIOPICA (J. H.).—It is quite right to water them very freely during growth—liberally, in fact, with liquid manure; but a better plan would be to form trenches, as for *Celery*, in a position sheltered from winds, manurize well. We should harden the plants off, divide them, and plant out, watering them very freely in dry weather, taking up and potting them in late September, and they will afterwards flower freely.

CRYSTALS OF AMMONIA FOR GERANIUMS (Bucks).—We have little experience of them, and what we have is not satisfactory. Perhaps your friend would let out the secret of which we know no one in gardening can keep except at a disadvantage. Most secrets of the kind are mythical.

MANAGEMENT OF BEGONIAS (Idem).—Continue the seedlings in heat until they can fairly be handled, then pot them off singly in 3-inch pots, returning them to heat, and continuing the process until well established, after which they may be gradually hardened, shifting to a cooler position as required. The heated frame by a paraffin lamp would be best; had you particular care; if with a section, and east of oil all the better. Have patience with the bulbs of *Begonia Frobellii*, they will start into growth early next month. The best mode of preserving tubers of *Begonias* is to keep them in dry sand in a box, the older bulbs had not had water gradually withheld so as to ripen them.

SOWING PRIMULAS AND CALCEOLARIAS (Idem).—The *Primulas* seed should be sown at once in a pot or pan well drained, using a compost of loam two parts, with a third of old cow dung, well decayed manure, or leaf soil, just covering the seed with fine soil, placing in a frame, and shading from bright sun. If the frame be heated the seed will germinate very fast, in dry sand in a box, the seedlings have one rough leaf and show the second pot them off singly in small pots, or prick them off in pans 1 inch to 1½ inch apart, placing in a cold frame kept close and shaded from sun until established, then admit air moderately, shading from bright sun. If pricked off the plants may be sown in a pot or pan, and potting them in a box, the seedlings have one rough leaf and show the second pot them off singly in small pots, or prick them off in pans 1 inch to 1½ inch apart, placing in a cold frame kept close and shaded from sun until established, then admit air moderately, shading from bright sun. If pricked off the plants may be sown in a pot or pan, and potting them in a box, the seedlings have one rough leaf and show the second pot them off singly in small pots, or prick them off in pans 1 inch to 1½ inch apart, placing in a cold frame kept close and shaded from sun until established, then admit air moderately, shading from bright sun. In October before frost remove them to a light airy position in the greenhouse. The *Calceolaria* seed should be sown the first week in July in a pan watered before sowing,

the seed to be scattered on the surface and not covered with soil, but sprinkled with silver sand. Place in a cold frame, and keep shaded until the seedlings appear, taking care that the soil does not become dry. Pick off in pans when the plants can be handled, using a soil frame raised above the ground, and lifting carefully pot off singly in 3-inch pots, returning to the frame where they may remain until frost, when they should be moved to a greenhouse, shifting into larger pots as required. Water so as to keep the soil moist. What they want is moisture but not a sodden soil, coolness but safety from frost, and a good ventilation. These parts form, and a part of cow dung or well-decayed manure, with a sixth of sand will grow them well.

STRAWBERRY FLOWERS BLIND (D. C.).—The flowers are "blind," having been injured by frost or the long continued cold weather, it is not infrequently arising from the imperfect ripening of the crowns the previous autumn. Tons, however, are blackened by cold. The kind is free and good.

REMOVING RUNNERS FROM STRAWBERRY PLANTS (F. A. F.).—If you do not wish for an increase of plants, remove the runners as they show; but if young plants are wanted for planting past the first runners, and when they are well rooted take them up and plant, afterwards removing all runners as they appear.

BENDING THE STEMS OF ONIONS (Idem).—We could not say when this should be done without seeing the plants. If thick in the neck it requires to be done earlier than when the neck is small.

SCALE ON VINES (Idem).—You must act promptly, yet carefully, patiently, and perseveringly in removing the insects from your vine, but if ruined. Go over the Vines and remove with the hands or a piece of stick all of such clusters of insects as you have forwarded to us. Have at the same time a solution of soft soap of a strength of 2 or 3 ozs. of soap to a gallon of water, and dip in it a little cotton water, about a pint to each gallon, and with a sponge wash thoroughly the stems and leaves where the insects are apparent, and from which you have previously moved what you have been able of them. You cannot remove all, for underneath the old scales are a progeny of young, which you cannot probably see, and which will run in all directions when the Vines are moving; but if you manage to get the insects away from the apple it promptly wash the insects away. Disturb the compound you will answer as well as soft soap, using the solution when nearly as hot as the hand can bear immersion in it. The remedy we propose may be a slow one, but a crop of Grapes is worth more than a day or two's labour. Neither spraying nor washing will remove any insect in your case. By removing the insects and sponging the Vines you can avoid injuring the bunches. The solution will not injure the foliage nor seriously discolor it if applied when warm. We should not syringe the Vines afterwards with clean water, but would rather leave the foliage, &c., as distasteful to the insects as possible. At the winter's pruning you must brush the Vines and every portion of the viney with a hot solution of three strength named, and you must thus eradicate the pest. The "Vine Manual" will suit you; it can be had post free from our office for 2s. 8d.

INSECTS ON PEACH TREES (Idem).—Remove all the leaves similar to those you have sent us, and syringe the trees with the solution advised for the Apple, applying it in the evening, and repeating it every day or two, and syringe every afternoon when the sun is declining, yet soon enough for the foliage to dry partially before nightfall. You must kill the insects, or they will speedily kill your trees.

RAISING AUBRIETIAS (Idem).—We should sow seed at once in light soil in pans or boxes, keeping regular moist and in a cold frame until the seedlings appear, then admit more light, and syringe the plants when they become sturdy, when they may be transplanted in the open ground, shading them for a time and watering them as required. We have raised many thousands of Aubrietias in this way, which have made good plants during the season, and have flowered freely during the following spring. There must be no delay in sowing, and no subsequent neglect, or the plants will not attain to a flowering size during the season.

NAMES OF PLANTS.—Some of these replies have been unavoidably delayed. (*F. Peel*).—*Iris tuberosa*. (*Young Gardener*).—1, *Polystachya oppositifolia*; 2, *Heliotropium peruvianum*. (*A. B.*).—A species of *Santolina*. (*Constant Reader*).—1, *Andromeda calyculata*; 2, An Adiantum, but the specimen is immature. (*Old Subscriber*).—1, *Davalia* (?); 2, *Lycopodium complanatum*; 3, *Pteris cretica*; 4, *P. serrulata*. (*Mid-Sussex*).—1, *Lithospermum prostratum*; 2, *Festuca ovina*; 3, *Iris fidesidifolia* var.; 4, *Fronet* so young for identification; 5, *Cyrtolium falcatum*; 6, *Asplenium viviparum*. The *Auricula* is a very good border variety. (*Eight-year Subscriber*).—A large-flowering variety of *Oenothera coccinea*. (*W. W. A.*).—The Fern from Covent Garden is *Adiantum pedatum*. The other one we cannot name from the fragment sent without spores. (*G. Diss*).—1, *Phlox frondosa*; 2, *Aubrietia purpurea*; 3, *Saxifraga Gmelini*. (*Student*). *Hadlow*.—No. 1, *Fagus sylvatica*, the Beech tree; 2, *Fedia carinata*; 3, *Carpinus Betula*, the Horn-beech; 4, *Cystopteris fragilis*. (*S. M. W.*).—*Pteris angustifolia*. (*J. C. M.*).—*Adiantum pedatum*. (*R. A. F.*).—*Ceanothus azureus*.

POULTRY, BEE, AND PIGEON CHRONICLE.

BANBURY POULTRY SHOW.

The entries here were very good. Mr. Herrieff is a good fancier and knows how to please fanciers, and he had a valuable coadjutor in the Pigeon department in Mr. J. W. Edge of Birmingham. We anticipate a great run of success for this Show in future. The Judge was Mr. Hewitt, who apparently gave every satisfaction. The owner of pen No. 8, however, we can only imagine was not of the satisfied party, for his pen was disqualified, and rightly so too. Truly he must have been a novice in the way of thinking of bringing Mr. Hewitt, for we should learn he offered this worthy Judge half the value of it should give his bird the cup. This exhibitor in his embryo form had better keep in it, as he will not meet, we imagine, a cordial reception in future at other shows.

Dorkings opened the catalogue, the first prize going to Mr. Allen's new purchase from Mr. Woodgate. He is a fine cock with good feet and much bone, the bird which won first for his late owner at Bournemouth. The other noticed birds, too, were

all good here. In hens Mr. Allen's pen was empty, but it was a wonderful class, and thirteen pens won cards from the Judge. The first hen was a fine-framed bird and good in colour, but two or three more were closely pressing her in quality. The next Dorking class was very good, and the hens, too, were excellent, the winner very bright in colour and neat in feet. The *Cochins* were four well-filled classes, and Mr. Darby's birds were well shown and in good feather. These were immense classes, and though some birds were looking a little the worse for wear, they were, nevertheless, a good and well-judged lot. *Prize* was very fairly. The first Dark hen was a well-pencilled bird, and was the 181 (British). The cup went to Mr. Smith's fine old Dark cock looking fresh and well. Light hens were capital, all the three prize birds being of much merit. Of the *Game* a Brown Red cock of good style won the cup. Mr. Matthews sent a good team. He had a capital Ducking hen which took first, as, too, was the cock in the former class, which was especially good in colour and head. The *Hamburghs* produced a neat collection, though they were not so numerous as some other classes were. The cup went to good Gold-spangles. There were eleven pens and these of good quality. One bird was entered in the wrong class, being really due in the next one. The first Golden-pencilled hen was good in pencilling, and very neat altogether. In Silver-pencils only five pens appeared in the catalogue, two of which were in the wrong class again, so no third was given. The cup pen of *Spaniards* were excellent, the faces being large and white, and the birds generally well shown. *Houdans* brought fourteen pens, and the quality was better than we have seen of late. In the other French class large Crêves were first, and fine La Flèche second. Pen 380 (Barnell), contained a good hen, as did 377 (Feast). *Poland* came well to the front, all colours being well represented. Splendid Silvers won first, the hen a marvellously good bird. A grand pen of White-crested Blacks were second, closely pressing we should think on the first pen, as the hen was of beautiful shape and colour with a good globular crest. Third went to very fine Golds. 388 (Hinton), were good Silvers, and 393 (Darby), very excellent Blacks. The *Leghorns* were only mediocre in quantity and quality. Only ten pens appeared for the six prizes, though eight of them were noticed. Very many white birds were by now lost much of their purity of colour, and the extra Loos seem still very far from perfect. Any variety class was the most interesting collection. Black Hamburgs of fine quality won first, very fair Malays second, and Andalusians third. Fourteen pens were noticed, which contained some good Black Hamburgs, Minorcas, Malays, and some "Langshans." *Bantams* were a pretty little lot, the cup Laced being a very beautiful pair. In the next class smart Blacks were first, and White-booted second. Mr. Entwistle sent two pairs of Black Reds in good feather.

Aylesbury Ducks were not numerous, but the three winning pens were well up to the mark. In the Variety Waterfowl class a pair of fine Pekins won first, and fancy Ducks second and third, but every pen in the class won a card, and the quality was generally good. The four pens of *Geese* were highly creditable, and Mrs. Wyke's *Turkey* hens were of large appearance and in good feather; they were both Cambridge, as Loos was the first cock, and from the same yard we believe. There were 573 pens in this department of the Show so far, which gives an average in the forty-one classes of fourteen per class, which is extremely good we consider for the time of the year.

In the *Pigeons* many classes were superb. It would be really invidious to select individual birds, so many were of exceeding merit. Carrier coxes were especially good, and to the first-prize bird went the cup for the best pen in the Show. He was a grand bird, fine in head and wattle and quite deserving of his high honours. Mr. Fulton brought down a grand team and did well with them. Turbits were a most excellent lot. Owls, too, were a grand class, and we were surprised to find so large a collection of the English type. Antwerps and Dragons were excellent, and the classes by their magnitude made the Judge's work arduous. In the Variety class, which was of great merit, a splendid Trumpeter was first and deservedly so, while two good Magpies were second and third. The awards in this class, which was of great beauty, were exceedingly well selected, Magpies and Trumpeters of the new type being especially well represented. We furnish the awards below and hope they are correct, but as many were responsible for the cards on the pens we will not be responsible for all of them.

POULTRY.—*Dorkings*.—*Best* Silver-Grey—Cock—1, H. Allen, 2, F. Parlett, 3, Constatia of Dartmouth. Hen—1, T. C. Barnell, 2, J. C. Cople, 3, Rev. H. Peel, 4, F. Parlett, J. Cople. *Silver-Grey or White*.—Cock—1, Land Cup, 2, T. C. Barnell, 3, J. Wynn. Hen—1, T. C. Barnell, 3, W. B. Dennis, 2, Dr. W. J. Small. *Black*.—Cock—1, A. F. Smith, 2, R. E. Darby, 3, C. M. Stickings. Hen—1 and Cup, A. Darby, 2, C. M. Stickings, 3, Mrs. A. Tindal. *Any variety*.—Cock—1, A. Darby, 2, R. E. Darby, 3, R. E. Darby. Hen—1, R. E. Darby, 2, R. E. Darby, 3, R. E. Darby. *Minorcas*.—Dork—Cock—1 and Cup, F. A. Smith, 2, H. Lingwood, 3, L. C. M. Morris. Hen—1, Rev. J. D. Penke, 2, T. A. Smith, 3, R. E. Darby. *Andalusians*.—Cock—1, Light—Cock—1, A. F. Smith, 2, R. E. Darby, 3, Constatia of Dartmouth. *Game*.—J. Birch, Jun. 3, R. E. Darby, 2, Constatia of Dartmouth. *Prize*.—Cock—1, J. Birch, Jun. 2, R. E. Darby, 3, J. Birch, Jun. *Poland*.—Cock—1, J. Birch, Jun. 2, R. E. Darby, 3, M. Potter. Hen—1, R. J. Pratt, 2, Hon. and Rev. Dutton, 3, J. Col-

In breeding, too great care cannot be taken in selection of the stock—in fact, almost everything depends upon the parent birds. Turkeys do not reach their full size and vigour until their third year, and it is reasonable to conclude that the best results are to be obtained by breeding from fully matured specimens. Experiments in breeding from three-year-old and from yearling birds have almost invariably resulted in a larger percentage raised and a greatly increased weight in favour of the former. There is one disadvantage in breeding from very heavy toms—the liability of having the backs of the hen skinned and torn. But this may be in great part avoided by penning the gobblers up before the breeding season commences, and reducing their weight. Turkeys are great rompers, and it is almost impossible to have good success with them unless they have their liberty and ample range. Early in April the hen begins to wander around, searching a secluded place for her nest. We found that old barrels turned down in a thicket, under the side of a stone fence, or in a clump of broken rocks, often provided the sought-for spot, and prevented the hen from stealing her nest in some more hidden place. Never disturb the hen when laying, or let her know you have found her nest, for if she suspects you she will quit the old nest and make another.

The early-laid eggs had better be set under common hens, letting the Turkey hen sit later in the season.

A few days before the birds hatch the hen should be dusted with flowers of sulphur. When the chicks are twenty-four hours old grease their heads with the following ointment:—1 oz. mercurial ointment, 1 oz. pure lard, and 1 oz. creosote petroleum.

When hatched put the mother in a roomy coop facing the south on the sod. Feed little at a time and often. Hard-boiled eggs are good for the first two days, after which give oard in which mix onion tops or sives, chopped or cut fine with a knife or scissors. When a week old add coarse Indian meal to the feed well scalded. After three weeks give them cracked corn, wheat, &c., once a day or oftener. Keep fresh cool water by them at all times.

The first three weeks is usually the critical time with the little "Turks," and if kept dry and warm with abundance of insect food within their range and reach, there will be little trouble in raising them. It is not best to give the mother her liberty until after this period, and even then it is well to limit her range for another fortnight. They should be shut up at night and not let out until the dew is off the grass, until they are six or eight weeks old.—(*American Pet Stock Bulletin*)

THE UNFAVOURABLE SPRING.

The spring months of the last few years have been very unfavourable for bees. "There is no difference now-a-days between the weather of winter and that of spring," said a gentleman in a railway carriage yesterday morning. The cold weather of late years has continued throughout the spring months, which has been very disappointing to bee-keepers. And what spring season has been more disappointing and worse than the present one? For very many weeks we have had in this neighbourhood north-easterly winds, which checked and often blighted vegetation, driving the blossoms from the trees as soon as they appeared. Honey-gathering has been out of the question. Bees have been living on last year's stores or what has been given to them artificially. Yesterday (May 25th) the wind veered round to the west, when our bees for the first time this year gathered honey enough to supply their own wants for the day. I daresay it has been otherwise in the south of England. In ordinary seasons swarming with us begins about the 10th of May. This year it will be later, but after all we may have a year of honey. It is well to look forward hopefully. The eyecore trees are in full blossom, and the apple blossoms are not all gone. Raspberries and brambleberry so rich in honey are coming forward; so are field mustard (ketlock) and field beans, which yield honey plentifully. Then we shall have white clover, the best of all honey plants, which continues a long time in flower, also lime trees and the hawthorn of Grosvenor. The first half of last season—until the middle of June—was very discouraging to young apiarists, afterwards their bees gathered considerable stores of excellent honey. I am hopeful that 1877 will be better than 1876.—A. P.

OUR LETTER BOX.

COLOUR OF FOWLS (W. F.A.)—In adult poultry any part of the skin that can be seen is sure to be red. It is rather an indication of health and strength than otherwise, but we do not think it quite so red as the comb and gills. Hens at this time often become naked behind, they are always red. So in the naked parts of a May they are always very red. These parts of a fowl's body that are most liable to be attacked are also the most exposed and the roughest. This will account for the colour. But age has a great deal to do with it. The older fowls get the coarser and the more coloured does their flesh become.

VENERY ON FOWLS (C. B.)—Four descriptions of the effects of fleas and other parasites on young chickens are graphic and true, but we have never found their acting so largely on the appetite. Chickens cannot be reared if they are suffering from vermin. The visitation may arise from being in a

damp place, where a dust bath is an impossibility; or from lack of tone and condition, caused by improper or insufficient feeding. The first may be remedied by placing either road grit or wood ashes in their haunts in perfectly clean places. They will dust themselves in them. If you use road grit it will be well to mix a handful or two of black sulphur with it. From the time they begin to use the dust bath the cure has begun. Another remedy is to drop with the finger a drop of sweet oil on the poll of the head, one under each wing, and one on the back. Your food should consist of bread and milk, boiled egg chopped fine, cooked meat, chopped very fine, crushed wheat. Give them beer to drink. Use no other foods. If they have been kept indoors put them out. Wooden, stone, or brick floors are very favourable to the growth of vermin. They form preservatives for it. We have no doubt either of these plans will rid you of your pests.

CAEKER IN ENGLISH OWL (New Subscriber).—Gloss away the secretion on the diseased parts, and anoint by means of a camel-hair pencil with carbolic acid on part to glycerine eight parts. This remedy can be applied to either ear, throat, or mouth, but if to the mouth and throat one-half less of the acid. There is a great doubt as to caeker being contagious, but separate your bird from the rest for fear. Be most careful with the water vessels, and see that they are clean, and also that no dung gets mixed with the food of your birds.

HIVE DRING IN MAY (Berar).—We should judge that your bees have been simply starved to death. We can see or imagine no other cause for the hive being in the condition described. Nor should we be surprised to hear that many other bee-keepers have shared your ill-experience. We lost one hive about a fortnight ago from the same cause, and about the same time several others if we had not kept up a regular supply of food. Our stocks were fed until May 25th, when the weather improved and the feeding was discontinued. Such a season must be rare in the recollection of the oldest apiarian in England. We advise you to feed at once any hives of which you stand in doubt.

BEES (M. J. S.).—We only publish our manual on bees—namely, "Beekeping for the Many."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				RAIN.
	Baromet. at Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1877.										
May.										
We. 23	30.264	46.5	42.8	N.E.	deg. 48.1	deg. 54.6	deg. 41.0	deg. 35.9	deg. 41.4	—
Th. 24	30.195	49.6	44.7	N.E.	deg. 55.5	deg. 42.2	deg. 39.4	deg. 39.4	deg. 41.6	—
Fri. 25	30.231	63.1	49.9	N.E.	deg. 60.0	deg. 46.5	deg. 38.8	deg. 34.2	deg. 34.2	—
Sat. 26	30.172	58.0	51.2	N.W.	deg. 61.1	deg. 48.0	deg. 49.7	deg. 35.8	deg. 46.6	—
Sun. 27	29.972	58.6	48.5	S.W.	deg. 62.0	deg. 45.4	deg. 43.3	deg. 34.6	deg. 41.6	0.176
Mon. 28	30.053	58.9	49.9	S.W.	deg. 62.5	deg. 45.3	deg. 43.9	deg. 31.8	deg. 47.7	0.238
Tu. 29	29.551	54.4	49.7	S.W.	deg. 51.4	deg. 63.2	deg. 44.6	deg. 31.3	deg. 40.4	—
Means	29.925	54.0	48.1		deg. 59.5	deg. 48.6	deg. 41.5	deg. 34.6	deg. 41.4	0.279

REMARKS.

- 23rd.—Rather dull, but fair all day; a little sun at times, but not enough to warm the air.
- 24th.—A fine day, and rather warmer; a very slight shower about 7 P.M.; fine sun and starlit night.
- 25th.—A fine day, getting gradually warmer as the day advanced.
- 26th.—Slight haze about 9 A.M.; but fine warm day throughout.
- 27th.—Very fine all day, but the wind getting more and more high towards night; very high at midnight.
- 28th.—Terrific wind in the early morning; alternate sunshine and showers during the day; unusual drizzle between 6 and 7 P.M., followed by very heavy rain for a short time; the wind having gradually subsided, splendid rainbow lasting only a few minutes immediately after the rain. (pleasant day.)
- 29th.—Very bright morning; some very slight showers, but on the whole a fine bright week, very windy on 29th. Range of temperature rather greater than in previous week.—G. J. SIMONS.

COVENT GARDEN MARKET.—MAY 30.

Business still keeps quiet, and prices have generally had a fall. Best Strawberries sell well. Outdoor vegetables are in better supply.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Oranges.....	1	0	0	0
Apricots.....	doz.	1	6	0	Peaches.....	doz.	1	0	0
Pigs.....	lb.	0	2	0	Pears.....	doz.	0	0	0
Filberts.....	lb.	0	0	0	dessert.....	doz.	0	0	0
Cobs.....	lb.	1	0	0	Pine Apples.....	lb.	2	0	0
Grapes, hothouse.....	bu.	2	0	0	Strawberries.....	doz.	0	12	0
Lemons.....	1/10	6	0	0	Walnuts.....	bushel	5	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	8	0	0	Mushrooms.....	pottle	1	0	0
Asparagus.....	doz.	1	0	0	Musards & cress.....	busnet	0	0	0
Beans, Kidney.....	1/10	1	0	0	Onions.....	bushel	0	0	0
Beet, Red.....	dozen	1	6	0	" pickling.....	quart	0	4	0
Broccoli.....	doz.	1	0	0	Parasley.....	doz.	0	0	0
Brussels Sprouts.....	1/10	0	0	0	Parsnips.....	dozen	0	0	0
Cabbage.....	dozen	1	0	0	Peas.....	quart	0	0	0
Carrots.....	bunch	6	0	0	Potatoes.....	bushel	0	0	0
New.....	1/10	1	0	0	Kidney.....	doz.	3	0	0
Capsicums.....	1/10	1	0	0	New.....	lb.	0	2	0
Cashflower.....	dozen	2	0	0	Radishes.....	doz.	1	0	0
Colery.....	dozen	1	0	0	Rubards.....	bushel	0	0	0
New.....	1/10	1	0	0	Salsify.....	bundle	0	1	0
Columbia.....	doz.	2	0	0	Scazzoni.....	bushel	0	0	0
Cucumbers.....	each	0	1	0	Shallots.....	doz.	0	0	0
Endive.....	bunch	0	0	0	Shallots.....	lb.	8	0	0
Fennel.....	bunch	0	0	0	Sprouts.....	bushel	2	6	0
Garlic.....	lb.	0	6	0	Turnips.....	bushel	0	0	0
Herbs.....	bunch	0	0	0	New.....	doz.	0	2	0
Lettuce.....	dozen	1	0	0	New.....	doz.	0	0	0
Leeks.....	bunch	0	4	0	Vegetable Marrows.....	0	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 7-13, 1877.	Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.		
7	TH	Royal Society at 8 P.M.	65.3	46.5	5:57	8 46	8 11	1 9	8 55	25	1 25	158
8	F	Quekett Microscopical Club at 8 P.M.	70.5	46.4	5:55	8 46	8 12	1 23	4 55	26	1 14	159
9	S	Royal Botanic Society at 3.45 P.M.	70.8	47.2	5:50.3	8 45	8 13	1 43	6 21	27	1 3	160
10	SCN	2 SUNDAY AFTER TRINITY.	69.6	46.9	5:53.3	8 45	8 13	2 9	7 45	28	0 50	161
11	M	Royal Geographical Society at 8.30 P.M.	73.1	47.5	5:59.3	8 45	8 14	2 59	8 59	0	0 38	162
12	TU		71.4	46.1	5:58.5	8 45	8 14	3 48	9 56	1	0 26	163
13	W	Royal Botanic Society—Second Summer Show.	71.9	47.4	5:56.5	8 44	8 15	5 5	10 36	2	0 13	164

From observations taken near London during forty-three years, the average day temperature of the week is 70.8°; and its night temperature 47.0°.

TOP-DRESSING—FERTILISERS.

WHEN we dig manure into the ground in the autumn and winter we undoubtedly convey to the soil the great bulk of the nourishment required by the crops. Farmyard manure can never be dispensed with; it is the gardener's sheet anchor, and he who has sufficient of it and uses it judiciously is tolerably independent of further manurial aids. Few, however, there are who have as much manure as the heavy nature of the cropping carried out demands; and even if there is sufficient of stable dung for digging into the soil a supplementary dressing of guano, salt, soot, nitrate of soda, or superphosphate of lime cannot fail to be of great advantage in the spring and early summer, when the crops are in growth, in bringing them more quickly to maturity, and also in a great measure in preventing them from injury by slugs, which are occasionally so destructive.

"A good start is half the battle," is an old and true saying, and I know of nothing to which it applies with greater force than to gardening matters. During a tolerably long experience a few points have become fixed on my mind as of great importance. In propagating I always like to start with a good cutting, in seedling-raising with bold fresh seed, and in general cultivation with good well-worked and well-manured soil. These are points which I cannot afford to ignore, and they are such as I have generally been able to secure, and yet I have not always succeeded as I have wished. I have had to battle, like all gardeners, with something beyond my control, and which has rendered my efforts in obtaining a "good start" comparatively futile. I allude to the weather. Seasons have occurred now and again when with all my care in selection, preparation, and stable manure, the crops would not grow to my satisfaction, and I have experienced unpleasant forebodings that at some time or other a blank would occur in the supply of flowers or vegetables, and that at a time probably when the weather may be of the most favourable character, making it all the more difficult to convince others of the real cause of the scarcity. Such a season is the present one. Crops cannot grow with freedom, and they remain in a semi-standstill state a prey to birds by day and snails by night. The season is an extraordinary one, and extra measures become necessary to render it, as far as lies in our power, a productive one. Fruits that have been destroyed by frost we cannot replace. Fertilisers can be of no service in that department of our duties; but in the flower garden, and amongst the vegetable crops—however well the ground may have been manured—they may be of very great service.

I cannot conceive a garden, be the size of it what it may, adequately furnished with proper necessities if a supply of some of the fertilisers above named are not provided. A bag of guano or superphosphate of lime, a bushel of nitrate of soda, and a heap of soot and salt,

cost little yet effect much in increasing the productions of a garden. Many who have gardens, and enjoy them too, are averse to purchasing any kind of "artificial." But notwithstanding the term that is applied to them there is much that is "real" in genuine samples of this class of manures. If it were not so, hard-headed and, as they are sometimes called, "close-listed," agriculturists would not invest in them so freely: yet it is pretty well known that those who do so are the most successful of cultivators, and the first to attain to the enviable position of having "land of their own."

I was for some years in the service of a "gentleman farmer" who like many others of his class enjoyed his garden, without, however, going to any great expense in furnishing it—at least that he was conscious of. His farm was his chief object, and I know that he thought much less of expending £1000 for "artificial" for it than he did of paying a little bill of 10s. for a few flower pots. The foreman of that farm was fortunately an admirer of flowers, and rejoiced in taking a prize for them and vegetables at the local show. I, perhaps, did not do the thing that was quite right in occasionally supplying him with a few Dahlias and Asters, and perhaps an odd Cauliflower to make up a brace; and I never thought that he was very wrong in permitting me to help myself to the fertilisers. It was the master's manure for the master's garden. Such flowers and vegetables as that garden produced I have seldom seen. They were the terror of the gardeners of the neighbourhood, and won at one show alone thirty-five prizes in which the gardeners of one duke, two earls, and at least a dozen squires competed. Had I been as honest as perhaps I ought to have been I should have "divided the spoil" with the foreman of the farm, for it is certain the prizes would not have been won without his valuable aid in supplying the "dust," as we termed the manures. Neither did we rob the farmer in the end, for less, very much less, farmyard manure was used in the garden after it had received a few liberal dressings of guano, &c. The increased productiveness of the garden also enhanced the pleasure of the owner. I know this to be true, for when he accepted the silver cup won at one of the shows I know what he said. He did not ask for the cup; if only a "farmer" he was too much of a gentleman for that, but he was pleased to possess it when I offered to him. The garden also added to the advantages of the gardener, for with the prize money he bought a wife, and she has proved a good one. I cannot therefore think that either myself or the foreman did wrong in using clandestinely the master's artificials.

It is wonderful how beneficial such manures are when used in the right quantities and at the right time. The right time to apply them is now, when the crops are young and too many of them are stunted and brown. The right manner of using them is by sprinkling them on the surface of the ground when it rains, or immediately before rain, and running the hoe through the surface as soon as it has dried sufficiently to be moved cleanly. The crops then receive the full benefit of the manure, and the "master" cannot smell it as he passes through

the garden. To apply such manures as guano, soot, and nitrate of soda during dry windy weather is wasteful. The most valuable properties of these fertilisers are volatile and have a natural tendency to evaporate. They may come down again sometimes (for nothing is lost), but they may then not only be diluted but fall on other people's crops. When you have them make sure of applying them to the crops you intend them for, and you make the mors sure of that by using them during rain.

The quantity to be applied depends, of course, on the manure used. If I had the choice of one fertiliser only I should select genuine guano, and if my garden soil was heavy I should require nothing to mix with it; but if light and hot in its nature I should covet some common salt. Guano alone, or mixed with one-third of salt for dry soils, and spread over the surface during damp weather at the rate of, say, 2 ozs. per square yard, will increase the value of any crop to which it is applied. To destroy slugs half the quantity, or less in dry weather, will be found highly beneficial. Superphosphate of lime is a safe and valuable fertiliser, and is suitable for sprinkling amongst small seedling crops of flowers and vegetables which guano might injure. These two mixed together are excellent for Potatoes, being quick in their action and lasting in their effects. But the most prompt of all the fertilisers is nitrate of soda. It will, if spread at the rate of 2 cwt. per acre, change the appearance of a Grass or Wheat crop in a few days, as it will that of any garden crop, especially of the Brassica family; it is a valuable stimulant for early Cabbages and Cauliflowers, also for Celery, Lettuce, &c.: half an ounce, or less, to the square yard is sufficient for these crops. Soot is a real gardener's friend if he is not afraid of using it. It consists of finely divided charcoal, and contains salts of ammonia. It must not be mixed with quicklime, or those salts will be decomposed, but it may be mixed with a small quantity of salt with advantage for dry soils. I know of no crops to which a liberal dressing of soot is applied that are not benefited thereby. It is excellent for Onions. Salt alone is very useful for dry soils on account of its great affinity for moisture. The soil of Asparagus beds where it has been used freely are often cool and moist in summer when the surrounding ground is hot and dry—even dusty.

If a gardener has at his command any or all of the fertilisers named, and uses them judiciously, he will not only be able to increase the productiveness of the garden in his charge, but will not require such large supplies of stable manure as would otherwise be necessary to sustain the fertility of heavily cropped ground.

An important advantage in the case of guano and soot is their value for making liquid manure of the best quality.—
A RETIRED GARDENER.

FLORISTS' FLOWERS RAISED FROM SEED.

POLYANTHUS.—The common Primrose (*Primula acaulis*), is the original species, Polyanthus being a variety. It is indeed astonishing what a great improvement is effected in the Primrose by subjecting it to cultivation. The common Primrose reproduces itself with astonishing uniformity in nature, yet if we transplant some coloured varieties among them, or near, we soon find the coloured on the increase, and what sight is finer than a border of Primroses in spring? The various colours—primrose, white, lilac, and several shades of red up to deep crimson, even almost black, form a very pleasing combination, especially if backed with Auriculas and Polyanthuses.

Primulas and Polyanthuses thrive admirably in any position, but prefer shade in summer. The finest border I ever saw was about 3 feet wide, on two sides of a Quick hedge about 4 feet high and about 100 yards long. The east side of the hedge was a sloping bank. It had been planted with common and coloured Primroses. They had seeded, converting the slope into a bank of incomparable beauty during spring, whilst on the other (garden) side of the hedge—west, was a flat border filled with Polyanthuses in great variety. Both borders were beautiful, the remembrance of them still lingers in my mind as one of the brightest sights of boyhood, and the Auriculas that occupied the east border of the garden were a sight not to be forgotten.

Why these reminiscences? Because I have before me daily a line of coloured Primroses and Polyanthuses in a border, or rather forming a margin to a border of Laurels, and the eye not only looks back but onward; for how many borders are cheerless in spring when there are materials at hand for render-

ing them beautiful? It is truly astounding what a number of seedlings spring-up about the old plants. To transplant them when they can walk be huddled in moist weather to the sides of shrubbery and woodland walks is not much trouble, and the charm they would impart would be more than compensating; besides, the insects would make their presence felt upon them, causing them to show in their progeny a commingling of colour. In this I am borne out by facts, for in the woods here are myriads of Primroses, the whole landscape being strewed as it were by the seeds with them, not a specimen of which within a quarter of a mile of the garden showing any trace of colour except primrose, yet within that distance are to be found specimens here and there of coloured Primroses, pale pink suffused with yellow, and higher-coloured forms of the type.

Though the gold-faced Polyanthuses are very beautiful there is no question but that the mottled flowers from their greater variety are more effective for borders, they being more hardy, less impatient of drought in summer and wet in winter. The seed of all the Primulas germinates as soon as it is shed from the pod if it come into contact with moist soil. The seedlings usually form a rough leaf or two before winter, and are fit to transplant in spring. Though March is a good time to sow the seed, I am persuaded it is best sown as soon as it is ripe, choosing a border of good loamy soil shaded from sun during the hottest part of the day, and being careful to keep moist. It is well if the situation be warm, having the protection of a hedge or low wall, and having full sun in winter and spring. At the latter time they may be transplanted to an east border 6 inches apart every way, affording them water in dry weather. They may either be left to flower where transplanted in the first instance, or be moved with balls in August or September to beds or borders. They will bloom to a certainty during the coming spring, and a bed of them is no undesirable object anywhere.

The seed is, however, generally sown in March, in pans or boxes well drained, and in a compost of yellow loam taken from a pasture with its turf, and laid-up in a ridge for twelve months, chopped-up fine, adding thereto equal parts of old cow dung and leaf soil, the whole being well incorporated. An admixture of sand may be given if the soil be deficient of that substance. The surface should be made even and fine, and the seed be scattered evenly, just covering it with very fine soil; the pans to be placed in a gentle hotbed and close to the glass, keeping them moist, and shading from bright sun. When the seedlings appear admit air moderately, and when they show the second leaves remove to a cold frame, and by the end of May or early June they will be ready to transplant, being nearly if not equal in size to those sown in August. A border should be chosen for them shaded from the midday sun. The best shade is a deciduous hedge so that the plants will have plenty of light in winter and early spring, for, though shade is desirable when they are in bloom, sunshins is needed for bringing-out bright colour. If the plants are to be transplanted in early autumn to their flowering quarters it will suffice if the plants are put out 3 inches apart in the summer, but the distance if strong plants are wanted should be 6 inches. I have often pricked the seedlings off about 2 inches apart, and transplanted them in August to 6 inches. Either plan answers, only lift the plants carefully, firming the soil well about them, shading and watering until established. Though a shaded position is desirable after April and in that month for stage flowers, yet there is hardly a position in which the Polyanthus will not thrive, the exceptions being a parched one in hot weather and a gloomy one in winter and spring. All the plants will flower the spring after sowing, or if sown in August they will not flower until the second spring. The plants will, however, be stronger.

In saving seed the best-formed flowers and clearest and brightest colours only should be selected for the purpose; but if any advances is to be made crossing must be resorted to, and to effect which it is necessary to remove the anthers from the seed-bearer, to effect which remove the corolla down to the level of the stigma, being careful not to injure it—better not touch it with the scissors. This should be done when the flower is about half expanded. The stigma is in a fit state for fertilisation when its summit is marked by a viscous exudation generally covering the entire surface; the pollen being powdery, then adheres to the stigma. It is well not to fertilise more than two or three pipes on a plant, which will give larger sower seed than if more pipes were operated on. A pocket lens is necessary to examine the organs of reproduction. I do not see why we should not have gold-faced Primroses, nor

why the Primrose should not be raised to the rank of a florists' flower.—G. ABBEY.

STRAWBERRY FORCING.—No. 1.

ALTHOUGH this subject has been pretty frequently written upon, I consider it is yet far from being exhausted. The Strawberry is such a popular fruit and so accommodating in its habits that amateurs may take up the forcing of it with much certainty of success; for their instruction especially I will submit an account of my practice of raising the plants, their growth and mode of forcing them.

First, then, in order to have the plants well prepared, they should be obtained as early as possible. The earliest runners can generally be secured by the last week in June or early in July, according to the season. The best and most forward should be selected, and they are generally those nearest to the parent plant. A number of small pots—say small 60's, representing rather more plants than are required to be potted—should be filled with soil, such as leaf soil and loam mixed together, placing a little of the roughest of the compost in the bottom, with fine on the top, but no crocks this time. Each little plant is fastened on to the surface with a peg made from an old birch broom. I think pegging is better than laying a stone upon the pot to keep the plants in their places. A stone is so easily displaced, whereas a peg is a fixture. After layering is done frequent attention to watering will be necessary in order to induce the runners to emit roots as quickly as possible. In about a fortnight or three weeks an examination should be made to see if they are rooting well, and when the pots are fairly full of roots the runners connecting the old and young plants may be severed, but if cut too soon the check the young plants receive from being suddenly deprived of nourishment from the old plant causes them to flag, and I have noticed from time to time that those which suffer in that way do not make such good crowns in the limited time for their growth as do those that receive no check. When first removed it is well to place them in a shaded place for a few days and to water them regularly, and after a week or a little more the plants will be ready for potting. It must now be determined what number are to be forced early, because I am in the habit of using smaller pots for these, such as large 48's, or what some call small 32's, potting the others in large 32's. This brings me to the sort of soil to be used.

I like a firm soil, mostly good turfy loam, say two-thirds, and the remainder decayed manure; and if this has a little lime and soot mixed with it, it kills all worms, and the soot acts as a manure also. The soil should be moderately dry, the pots well drained, and the plants potted firmly. After potting the plants should be arranged in beds for the convenience of watering and other necessary work, such as keeping the runners cut off and weeds pulled out of the soil. A layer of ashes forms a very good bottom upon which to place the pots. The plants must not be allowed to root through the bottom, to prevent which they must be moved occasionally and re-arranged, and the ground be elased between them. With this treatment the plants ought to form good crowns by the autumn. I do not like to see double or treble crowns, preferring plants with single, hard, and well-ripened crowns. Towards the autumn, when they have finished their growth and while the crowns are forming, they will not require so much water, but the Strawberry plant will not bear to be kept dry at any time; but at this stage they will need more care in watering than is necessary earlier in the season. As the plants grow they must have more space to allow the air to circulate amongst them, and to prevent the foliage from being drawn up. Worms do harm in the pots, and if they find their way in, a watering with lime water occasionally will drive them out; they are apt, if suffered to remain, to sour the soil and throw the plants into bad health. In watering during hot days in summer take care that the leaves are not much wetted, and occasionally the pots must be examined at the bottom to make sure that the water passes through properly.

In November, when sharp frosts are expected, the plants must be placed in close quarters, but I object to their being banked up against a building and laid on their sides, for there is then no means of keeping the soil moist, and if it once becomes thoroughly dry the plants are ruined. I have seen some hundreds of plants cast aside as useless, which I believe was caused by their having been too dry. It is not natural for the Strawberry to be dry, as witness them in the open ground; and when Strawberries are grown-on fast, as these must be,

the crowns are a long time in doing their work, and the roots they have made must be kept in a fresh and healthy state.

The following is the method I adopt in preserving them:—Choose a high or dry spot where the water will pass off freely, and make up a bed of rough litter, or leaves if they can be obtained, about 6 feet wide and 18 inches high; plunge the pots into this quite up to the rims, and be sure and make all as firm as possible. The pots may go close together, so as not to take up much room. This bed will become moist with the rains, and it will be found that the plants will do without water, because the pots will absorb the moisture from the bed. Occasionally turn two or three out of the pots to see if the roots are in a fresh and healthy state; if so, all is right. The sorts should be arranged in rotation as they are wanted to be taken for forcing; and if thought best, the first batch to be forced may be placed in a cold frame instead of being plunged outdoors for the short time they would have to remain. Those outdoors will require some protection in frosty weather. I use common fern or brake, because it is light; and sometimes rough litter, which is also light. A thin layer is sufficient to keep off a sharp frost, and may remain on for a few days at a time, but it should be renewed when showing signs of decay.—T. RECORD.

OLD ROSES.

BEING, I trust, "civilised,"—as I ought to be after so many years of service in an exemplary family and associated with the Rose—yet I cannot fully comprehend the purport of the utterances of your correspondent, who I hope is more than worthy of his name of "WILD SAVAGE." I think he is, for when a savage asks to be clothed and fed there is hope of his reclamation; it is when he "helps himself" and spurs the aid of the "white man," as children of nature often unfortunately do, that his condition is to be regretted, and he commands one's pity.

If I can read with sufficient clearness between the lines of the letter on page 385 I perceive that your correspondent is a "chief," and has been able to purchase such "lots of Roses" that his "beds are full;" and I think, therefore, he can equally afford to distribute them amongst the humbler members of his tribe to aid in decorating the wigwams which may possibly be found in his territory.

I do not advise any to purchase the old Rose trees of your correspondent. I can recommend as worthy of cultivation several old Roses when young and healthy plants of them can be obtained, but buying old trees is another matter quite.

It is surprising how much good may be done by distributing a few plants or flowers of any kind—the surplus of overstocked gardens. I know of a clergyman whose stipend exceeds little, if anything, my own moderate salary, who, conscious that he cannot give that which many others are able to do, gives what he can. He can strike Roses from cuttings and bud Briars, raise quantities of Currant and Gooseberry trees, save flower seeds and raise plants, and distribute them in his large parish. The gifts are not great, but the providing of them affords pleasure and congenial occupation to the giver, and wins for him esteem that makes him "rich," not on "forty," but on eighty "pounds a year."

Rather than advise "WILD SAVAGE" to sell his old Rose trees I would suggest that he make new beds for new sorts. I have not one word to say against new Roses, for I am conscious of their great beauty, and I cannot say how many years a few—just a few—of new Roses have been added to the collection in my care, but the old Roses have not been destroyed. The result is that the garden is "full of Roses," and by-and-by they will be sent by huge hamperfuls to fairs, festivals, and hospitals. That mode of spreading the Rose (and is it not worth the doing?) could not be carried out if the old "trees" were destroyed and new "plants" alone cultivated.

We might as well, and with as much reason, destroy our old Roses to make room for new as Mr. Turner might destroy that glorious old Paul Ferras which has won him such honours, and Mr. Paul that gigantic Juno which was described in your report of the Orleans Club Show as "perfection, and worthy of being classed as one of the best of the season." When I read of these marvellous Roses in pots and the admiration which they evoke, I cannot see why similar splendid old Roses and "trees" should be depieped out of doors—in the garden. Will "WILD SAVAGE" tell me why? He has not done so yet. He has replied in a pleasant bantering way, but has not what we in Yorkshire term "tackled" the subject on its merits.

When I am told that only a limited number of plants can be grown and for a special purpose, then I can understand the position; but when old Roses because they are old, and great bushes because they are great, are considered as being unworthy of a place in the garden, then I have a right to ask for a reason, and to ask also why the "champion growers" preserve such old specimens.

Our coachman says "it's time that 'WYLD SAVAGE' war braught to t' scratch an showed his mettle; he's allus at it. Can't ta giv him a wurd?" To that I have nothing to add, only—A PARSON'S GARDENER.

ROSES UNDER GLASS—DESTROYING APHIDES.

DURING this spring I have made use of a simple and certain remedy in relieving Rose shoots of this noisome pest. I have forty-nine Roses in a house built on terraces with walks and slopes. Forty-five of these Roses are of different sorts. I have lately procured nineteen new climbing Roses from Mr. Merryweather of Southwell, Notts. I never saw Roses grow so well as in this new style of building. I measured a bloom of *Maréchal Niel* the other day $5\frac{1}{2}$ inches in diameter. As you look upon these terraces, the flowers on which are growing in great profusion and splendour, the effect is charming. My plan for eradicating the aphides, which can be applied equally well out of doors, is to procure a rough woolly glove and dip the thumb into Scotch snuff, and then give the thumb and fingers a gentle twist round the shoot. Paralysis is instantaneous to old and young aphides.—OBSERVER.

THE EFFECT OF FROST ON FRUIT BLOSSOM.

THE effects of frost are not more deceptive on Apple than on Pear blossom. Perhaps even the deception in the case of the Pear is even greater than that represented in the Apple. Apple blossom often retains its full beauty after the embryo fruit has been killed, but the latter seldom makes any attempt at swelling. When the petals fall the sterility of the blossom is at once apparent. Pears, on the other hand, swell to a certain size when there is no possibility of their continuing to form perfect fruit. Outwardly the embryo fruit may be without blemish, and may increase in size as if it were sound, when internally it is black—dead. This has been clearly shown by "ARCBRAND" in the following figures:—

Fig. 57 represents a healthy and perfect example of the young



Fig. 57.

embryo fruit of the Pear as it exists in its uninjured state. The style in this instance is still of the natural pale green colour. A represents a cross or transverse section of the fruit in its perfect state.

Fig. 58 represents a young embryo fruit of the Pear, also in section, as at B, showing the effects of the frost after the fruits had been set and began swelling. The style here, as will be

again seen, is black, and the injury may be traced to the centre of the fruit, as shown at B, which is a transverse section of the latter. Fruits like these, having black hearts, are also dead, being killed by frost.



Fig. 58.

It is important to many that they should become cognisant of the effects of frost on their fruit crops as early as possible, and desirable that all should know of at least one reason why "Pears fall in shoals" at this period of the year.—W.

UNHEALTHY CUCUMBERS.

I HAVE recently erected a span-roofed house for the growth of Cucumbers in the winter as well as summer, heated with 4-inch pipes, a flow and return on each side for bottom heat, and one row in the centre for atmospheric heat. The house is 11 feet wide, and the same in height, ventilated on both sides and the roof. There is a good boiler attached to it. I planted-out the plants about the end of March; they commenced growing vigorously, and continued to do so, showing a quantity of fruit, from three to seven at a joint, which, however, become spotted and drop off. A number of the leaves are also spotted. The plants have plenty of root. I have added fresh soil, yet while the plants grow strongly enough the fruit and shoots decay. Can you account for it? I enclose a specimen of the disease.—A. E. C.

[The above letter is a sample of several others of the same nature which we have received. The diseased specimens were forwarded to an eminent authority, who has replied as follows: "It is no new disease, but unfortunately is too common, and at present quite unmanageable. Many causes have been assigned, such as the constitution of the plant having been injured by high manuring, and the consequent produce of a race peculiarly liable to disease. It has accordingly been recommended to procure seed from some quarter where the disease has not appeared, but this has not proved effectual. It would be easy to propose a theory resting on the fact that myriads upon myriads of extremely minute globules, which spin about with what is called the Brownian motion, are very conspicuous on dissection; but this, like some of the speculations as to contagious diseases in man, arising from germs specific to each, would at present be mere theory. As regards the specimens sent a careful microscopic examination shows that the velvety appearance which is so striking at the upper part of the fruit arises from a multiplicity of minute glands. These occasionally, as is the case in so many morbid developments, form a nidus for moulds such as *Polyactis*, but which have nothing to do with the disease as regards its cause. And then as to the discs, which are pretty generally covered with a mould, examination shows that it is merely a form of *Cladosporium herbarum*, the universal accompaniment of decay in every part of the world. The condition of the leaves

alone would seem to show that the disease is constitutional, and, if so, perfectly unmanageable. The appearance of such pallid spots, quite free from chlorophyll and soon withering, is one of the most common where a depraved constitution is concerned.—M. J. B."

We believe that the present practice of intercrossing has a great deal to do with causing this disease in the Cucumber. Of late years this has been carried on to such an extent that there is no wonder the constitution of the Cucumber has given way to the disease. Almost every new variety brought before the public, or exhibited before the Fruit Committee of the Royal Horticultural Society, is represented as a cross between two, or at most three leading varieties, such as Telegraph, Blue Gown, and Marquis of Lorne; indeed, there is rarely a new variety introduced that has not Telegraph as one of its parents.—Eds. J. of H.]

WOODLAWN, DIDSBUY, NEAR MANCHESTER.

THE RESIDENCE OF JOSEPH BROOME, ESQ.

Those southerners in whose minds Manchester is only associated with cotton, smoke, and dirt, would be very much surprised if they were to visit the city and see the nature of its surroundings, for I know of no place where you will find more pleasant villa residences or more beauty in its way than are to be found in the outskirts leading to Didsbury, Northenden, Whalley Range, &c.; while as you drive along the number of large conservatories and greenhouses evidence that taste for horticulture in some of its highest branches for which Manchester has long been famous. Nowhere are Orchids cultivated with greater assiduity, while the character of the stove and greenhouse plants exhibited shows what high-class culture the possessors of these villa residences look for.

Amongst those who have long been noted for their love of horticulture Mr. Joseph Broome has held a high place, while to his indefatigable energy has been owing in good measure the improved condition and prospects of the Manchester Botanical Society. I felt, therefore, that in visiting his residence I should see something worth looking at. Nor was I disappointed. It is small doubtless, as most of these places are where land is so dear; but it occupies four and a half acres of land sloping down to the river Mersey, and of this space the most has been made. I have never seen houses better filled, nor, where there is such a variety of subjects to be looked after, better cultivation than here; but then they have the advantage not only of the knowledge of its owner, but also of the skill and intelligence of Mr. Williams, a nephew of our celebrated Holloway grower; and so from first to last everything was in that condition which it is ever a pleasure to witness.

The chief range of glass opens on to the house, while the vineries and Pine pits are at a little distance at the sides, and thus the owner can at all times stroll amongst his favourites. A fine plant of *Maréchal Niel* occupies the small glass porch which opens into the conservatory growing up overhead, from whence its golden goblets were hanging down in abundance—just that position in which they always look best. On entering the conservatory the first plant that meets the eye is *Phormium tenax variegatum*, and most striking it is with its clear well-defined variegation; it is flanked by two fine plants of *Dracæna*, while around were good specimens of *Yucca filamentosa* and *quadricolor*, *Roses*, *Camellias*, &c. Opening on to this is a small house containing healthy plants of *Gleichenia dichotoma*, *Pandanus Veitchii*, *Anthurium Scherzerianum* and the white variety *Willmæi*, which will by-and-by make an effective plant. Opening on to this again on the left hand is a house in which Orchids in bloom were placed. Here were grand plants of *Lælia purpurata*, *Vanda tricolor* filling the place with its delicious fragrance, *Cypripedium cadatum*, *Odontoglossum vexillarium*, *O. nevium majus*, and various *Dendrobæ*. On the other side there is another small house of *Odontoglossums*, in which besides were several very interesting plants of *Masdevallia Veitchii* in finer colour than I think I have ever seen it, *Masdevallia Harryana*, and a fine mass of the North American *Cypripedium spectabile*. This has been lifted from the open border and was in the finest possible vigour; it is a grand addition to our hardy flowers and is easy of cultivation. There were also some excellent specimens of various *Drosera*, a most interesting tribe of plants. There is opening from this a large house containing many most attractive *Palms*, *Orchids*, &c., such as *Cocca Weddelliana*, *Acridea Lobbi* and *Fieldingi*, *Clerodendron Balfourii*, *Dendrobium Wardianum*, *Croton angustifolium*,

&c. Indeed there was hardly anything that seemed wanting, and it was like visiting the houses of some first-class nurseryman, so varied was the collection and so excellent the style of cultivation. On coming out from the houses you enter on the croquet lawn, or bowling green as it is more generally called here; while on the other side are some excellent examples of spring gardening, for Mr. Broome does not see the advantage of having his beds empty for eight months in the year. On the bank descending towards the river is an excellent fernery containing many varieties of British Ferns, which seem to do very well here; and here at the side has been left a piece of wild garden filled with the wild *Hyacinth*, *Primroses*, &c., which were found here when the owner took it, and which he has allowed to remain. How beautiful they are! What can be more lovely than our banks around here filled with the *Hyacinths*, *Campions*, and *Stitchworts*, and with the Ferns peeping up through them all? examples of bedding-out which we in vain try to rival.

The vineries and Pine pits are at the side of the house, and are, like the rest of the houses, filled to repletion. Inside borders for *Lanceaire*, says Mr. Williams, must be the rule, and the Vines showed how thoroughly they liked the treatment; while every space was occupied with plants, *Clematis*, *Ivies* for placing out on the lawn, a fine old plant of *Vanda teres*, some fine *Aranarias*, *excolea*, *elegans*, and *Napoleon Baumann*. There were some good Pines in the pits, and indeed with the exception of florists' flowers I know of nothing that was not represented and well represented here. That this is no exaggeration Mr. Broome proved by the position he took at the great Manchester Show, obtaining first prizes for *Palms* and second for eight *Orchids*, having against him such distinguished growers as Dr. Ainsworth, Mr. Wrigley, &c.

Like many Manchester men Mr. Broome is also a patron of the fine arts. The cornice of his drawing-room contains portraits of *Orchids* beautifully painted by hand, and the walls are covered with a choice selection of paintings both in water colours and oil, examples of David Cox, Miss Thompson, and other well-known artists being amongst them.

In giving these short notes I feel that I have very imperfectly described the riches of horticulture to be found in this place, but I have tried to show what can be done; and any lover of plants visiting Manchester will be heartily welcomed by the genial owner of Woodlawn to test for himself the estimate I have formed of them.—D., *Deal*.

APRICOT FAILURE—PRUNING.

EVERY week the gardening papers tell us of the disastrous results of the frost, and we as gardeners ought to know this fickle climate which we have to labour in, and so define such rules that at least would save some of this king of preserving fruit, and I believe if the following is acted upon the labour will not be in vain. It is said by some if you want Apricots by the bushel you must prune on the long-spur system—that is, spurs from 9 to 15 inches long should be the rule. True, in some seasons you gather fruit by the bushel, but what then of its quality? I therefore wish to impress on Apricot growers generally that but moderate quantity and the best of quality can only be secured by keeping the spurs close to the wall.

I have here 700 feet of south walling devoted to Apricots. While almost everybody's crop in this locality is lost I have a very fair promise of Apricots, and all sticking close to the wall; not a single fruit is left on the tips of the young spurs, but all there are blackened, while, as I say, close up to the wall we have a very good crop. My trees have been sheltered with two thicknesses of netting kept from the trees by small stakes, &c. For nine years past we have had six full crops and a sprinkling the other years, so that I feel certain the short-spur young-shoot system of pruning Apricots is the one to adopt.—R. GILBERT.

CAMPANULA PUSILLA ALBA.

MR. HARDING, in his able communication on page 403, has written approvingly of this lovely *Campanula*. Your correspondent alludes to *C. pusilla* and *C. pusilla alba* as "perfect gems." He is right. Both are beautiful, but the white variety is, in my opinion, the more charming. The plant only grows a few inches high, but the flowers are produced in such profusion as to produce a perfect sheet of white, yet not so closely woven to prevent the individuality of the "bells"

being seen. For an open place on a sunny rockery few plants are more distinct and effective than this is, and for forming marginal lines at the front of borders and round flower beds not many plants can produce a better effect during the summer months. It is true the plants do not continue flowering "until frost," yet their beauty is by no means transient, for, like white flowers generally, they resist the effects of a burning sun, and are as fresh under its influence as Daisies are in spring. Where other than "bedding plants" are cherished, and when flowers are appreciated in early summer as well as in late autumn, then I urge the cultivation of this lovely Campanula. Perhaps those having a small plant or see a few straggling flowers open for the first time may be a little disappointed; but let it alone and permit it to spread, and then its thousands of bells will compel admiration. It never rambles nor becomes unsightly, and is one of the most manageable of hardy alpine plants. It is increased by division, and flourishes in any ordinary garden soil. The chief attention required for preserving it in a healthy state is to prevent its becoming overgrown by larger and more luxuriant plants. Afford it pure air and sunshine, and it will reward with thousands of lovely flowers.—AMATEUR.

EXHIBITING FLORISTS' FLOWERS.

I CAN tell "D., Deal," of two fine collections of the Ranunculus which I saw quite recently, and where he can also enjoy them. One collection is in the garden of Samuel Barlow, Esq., Stakehill, Chadderton; and the other in the vicarage garden, Kirkby Malzeard, Ripon. No doubt other florists grow collections if we were to visit their gardens; but, as "D., Deal," says, though a pretty flower its bloom is soon over, and it is troublesome to keep the sorts separate. In the north they do not try to do this, but simply plant them out in mixture, the different sorts being well known when in bloom. One reason of this flower not being grown is that collections are not known or seen by the public. Why does not "D., Deal," bring up a stand to some of the meetings at Kensington and show them to those who would appreciate them? It is in that way that florists' flowers are becoming so popular in the north. The public rally round such men as the Rev. F. D. Horner, Mr. Barlow, and others, who, instead of mourning about the decline of florists' flowers and looking for something to turn up, work away silently and steadily. What is the result? There is at Manchester an Auricula show, a Tulip, and also a Carnation and Picotee show, held annually, well supported, and firmly established.

I assure "D., Deal," that he is not correct in his estimates of the extent of taste for florists' flowers. Why, not more than six weeks or so ago he was writing of the decline of stage Pelargoniums. Where is the decline? They are in every schedule one takes up if the show is held at the right time. Veitch, Turner, Fraser have houses filled with them; and when one asks, "What do you grow so many for?" the reply is, "We never have enough to supply our customers." They are in almost every window, and every garden, and every greenhouse.

I fancy "D., Deal," never dressed a Carnation or Picotee, and the "eminent florist" must have not spoken advisedly. Certainly neither of them understand dressing the flowers in the sense that florists dress them. What harm can there be in taking a bad petal out of a Carnation, especially if it had forty-seven? A quarter of a hundred removed would improve the flower, but no one would take out any but badly shaped and badly marked petals. Such ought to be removed just as they are removed from any flower of a similar character, such as Dahlias, Chrysanthemums, &c., which removal is and has always been done. I consider that to flatten a Fancy and to show the bells of a Hyacinth, if I understand what "D., Deal," means, is the very same as dressing a Carnation; but certainly I do not think, as he does, that highly stimulating a Ceking trench is a practice like dressing a Carnation—that is, picking a self petal out. Is it right to cut a pip from a Hyacinth and wrong to pluck a self petal from a Carnation?

He tells us he is conscious of only one motive, "the advancement of florists' flowers." Then, I say, although his motive is good the means used are bad and would result (but for the pluck of others who love and value flowers as ardently as "D., Deal," does) in bringing about the catastrophe he dreaded.

George Glenn had his own ideas about florists' flowers, but the comparison between him and "D., Deal," is not a happy one. Every grower would like flowers that do not require to be

dressed; some have reached that standard, and still there's more to follow.

One question, Did "D., Deal," ever hear of a grower taking days to dress a stand of twenty-four blooms? I never did. What does Mr. Ben. Simonite say to this, and Mr. R. Rudd, and Mr. Bower, who can dress such a stand in a few hours?—J. DOUGLAS.

BATH AND WEST OF ENGLAND SOCIETY'S SHOW.

THE centenary celebration of the foundation of the Bath and West of England Agricultural Society's Show is now being held at Bath in one of those commanding positions overlooking that beautiful city, and from which some of the most lovely landscape scenery of the picturesque neighbourhood may be seen to the greatest advantage. The portion of it which most concerns us is the horticultural tent, which is again under the stewardship of the Hon. and Rev. J. T. Boscawon. This department is always arranged with that taste for which Mr. Boscawon is so well known; but on this occasion he seems to have excelled, for every specimen—and they are mostly all specimen plants—is so placed as to exhibit it in all its beauty and with an eye to harmony of colouring, which makes the grouping extremely attractive. There is no competition, and consequently there are no prizes at this Exhibition; but the contributors do not go unrewarded, for Mr. Boscawon has a fund at his command which enables him to compensate in some measure the exhibitors for the efforts they make, and according to the merit and value of their exhibitions. First among the number of those is Mr. Pilgrim of Cheltenham, who has contributed a large number of his finest specimens. Among them we specially remarked a very fine one of *Phormium tenax variegatum*, which from its decided and bright variegation and long gracefully drooping leaves is a better plant for a group than the more rigid-growing *P. Veitchii*. There are also very handsome plants of *Croton longifolium variegatum*, *Thrinax elegans*, *Cordylina australis* in flower, a splendid specimen of *Acrophyllum venosum*, and a fine pot of *Anthurium Scherzerianum*, the flower of which had in many instances a double spathe. Among the other contributors were Sir William Miles, Sir William Marriott, W. E. Brymer, Esq., W. H. Gore-Langton, Esq., H. W. Tugwell, Esq., Handel Cosham, Esq., Col. Taylor, Mr. W. C. Drummond, &c.

The competition for Tea and Noisette Roses was not so great as was expected, for the time being between the seasons very few growers could enter, their plants being out of bloom; but we are informed on going to press that Mr. Charles Turner of Slough was successful in carrying off the nurserymen's cup, and Mr. Chard, gardener to Sir F. Bathurst of Clarendon Park, Salisbury, that of the amateurs.

ROSES.

I WAS a little surprised to see Mr. Jessep's remark as to unamiable criticisms of anonymous writers with regard to the Rose election of 1876. I presume, as I was the first to criticise the lists and results, that I am the person to whom your correspondent alludes. As to the criticisms being unamiable, it is the first time that I have ever heard anything I have written called by that name, and I do not think that even Mr. Hinton will consider that they were so, but if he does I cannot but offer him my apologies.

As to the charge of writing anonymously, I thought everyone knew who your "WILD SAVAGE" was, but as apparently Mr. Jessep does not, I had better sign my name in future. The reason I adopted that pseudonym was because so many people wrote to me privately, and the Editors request that no one should do that to any of their correspondents, and, indeed, it was partly in deference to their wish that I ceased to sign my name.

Roses are exceedingly backward, nor is this to be wondered at considering the season. I for one shall be unable to show Teas at Bath next week, and I cannot help thinking that most of those who do exhibit will out almost entirely from plants grown under glass. I am indeed glad to hear from "D., Deal," whose letters on all subjects I for one take great interest in reading, that our National Rose Society is doing so well. My information was derived indirectly from his brother Secretary. "D., Deal," says that the principal thing we shall have to contend against at St. James's Hall is want of space. I am afraid if this kind of weather is going to last that there will be another, and that is want of light. I was at one of Halle's pianoforte recitals on the 1st inst., and the room was in semi-darkness under the galleries, and the light in the centre of the room was far from being good. I know of no better hall

for Roses than the Shire Hall at Hereford, but there are no galleries.

The date fixed for the "National" will be an excellent one, and prove the wisdom of Mr. Hole in recommending the first week in July.

What Roses do the Royal Botanic Society hope to have on the 13th of this month? Will the Crystal Palace change their day? These are two questions which I should much like to see answered.—JOHN B. M. CAMM.

[We regret that other correspondents are obliged to suppress their names to prevent letters being addressed to them. Ten letters arrived at this office in one week addressed to "A PARSON'S GARDENER." How many more would he have been troubled with had his name and address been published?—ENS.]

ROYAL HORTICULTURAL SOCIETY.

JUNE 5TH.

FRUIT COMMITTEE.—John Lee, Esq., in the chair. Carter's Late Silver Head Broccoli was sent by Messrs. J. Carter & Co. High Holborn, but it was not white, and the Committee did not consider it superior to other sorts. Mr. Gough, The Gardens, Westwood Park, Bristol, also exhibited a new Broccoli. The heads were past their best, but considering the season it was regarded as a useful variety, but was not thought worthy of a certificate as shown. Mr. W. Howard, The Gardens, St. Osyth Priory, Colchester, sent heads of a Broccoli named Model. It was considered a distinct variety, but not an improvement on sorts already in cultivation. A Cucumber, presumed to be new, was sent by Mr. H. J. Barnes, gardener to Col. Taylor, Montrose, Weston Park, Bath, but it was not an improvement on many sorts already in existence. A cluster of Cucumbers was sent from Mr. J. T. Creed, gardener to T. Swanwick, Esq., Chesterfield. One of them was slightly fasciated. A letter of thanks was sent to the exhibitor. A dish of Tomatoes—Hathaway's Excelsior—was sent by Mr. Iggulden, gardener to R. B. Wingfield Baker, Esq., Orsett Hall, Essex. They were excellent examples of skilful culture, and received a cultural commendation. Mr. Cadger, The Gardens, Tring Park, Herts, sent a very fine dish of Strawberries. There seemed to be two sorts; one of them resembled Keen's Seedling. A cultural commendation was awarded. Mr. Denning, gardener to Lord Londesborough, Northorn, sent two pots of Garibaldi Strawberry, but the impression appeared to be that they were not different from Vicomtesse Hericart de Thury. A letter of thanks was voted to Mr. Denning. Mr. R. Gilbert, The Gardens, Burghley, Stamford, sent a Green-fleshed Melon—a netted Victory of Bath. It was of very fine flavour, but was not considered sufficiently distinct from Victory of Bath. Mr. John Gardner, The Gardens, Eleham Hall, sent a Red-fleshed Melon—Duchess of Edinburgh, which had been injured in transit and could not be adjudicated upon.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. This was not a large meeting, but many choice plants were exhibited in the conservatory. First-class certificates were awarded to Messrs. James Veitch & Sons, Chelsea, for Cattleya Skinneri alba, a very pure white and beautiful flower; to Mr. Turner, Slough, for Pelargonium Venns, Mrs. King, Eloquence, and Virgin Queen; to Mr. Kinghorn for Gloriosa Paragon, very fine; to Messrs. J. Laing & Co., Forest Hill, for a very neat and pretty double Begonia named Gloire de Nancy. This is the first double Begonia we have seen, and promises to inaugurate a new race which will be very useful for decorative purposes. The flower is somewhat like a single pip of a good double Geranium. To Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, for two charming varieties of Aquilegia, which were very much admired. These were named Aquilegia hybrida californica and A. hybrida cerulea. These are important additions to the old but pretty genus of Columbias. Mr. Ollerhead, gardener to Sir H. W. Peck, was also awarded a first-class certificate for Odontoglossum Alexandræ var. roseum.

Messrs. Veitch & Sons staged some excellent Orchids; amongst them were splendid plants of Odontoglossum novium, Cattleya Mossii, Cypripedium caudatum, and thirteen species and varieties of Masdevallia, which were very beautiful. A silver medal was awarded for the group.

Mr. John Wills of South Kensington had a small but attractive group, including a very large and good variety of Anthurium Scherzerianum, and excellent examples of Odontoglossum Alexandræ and Cattleya Mossii interspersed with Ferns, for which a silver medal was awarded.

From the gardens of J. G. Heppburn, Esq. (Mr. J. Loveland, gardener), Sidcup Place, Kent, came a group of over fifty Orchids, noticeable amongst which were two large plants of Vanda suavis; a fine Anguloa Clowessii; small but well-bloomed plants of Oncidium crispum, sessile, and flexuosum; Odontoglossum vexillarium and citrosimum, very fine; Cattleya Mendeli, lobata and Mossii; Cypripedium caudatum, Roezlii, and barbatum;

and Dendrobium Dalhousianum, and noble caeruleum, for which a silver medal was deservedly awarded.

Mr. Ollerhead also exhibited excellent Orchids, including several Masdevallia, Cypripedium niveum and barbatum, Odontoglossum Alexandræ and citrosimum, a very fine Cattleya Mossii pallida, Oncidium ampliatum, Laelia purpurea, the curious Brassia Lawrenceana, Saccolabium retusum, Dendrobium formosum giganteum, &c. A silver medal was also awarded to this group.

Messrs. Barr & Suggden sent an extensive collection of Ixias and Sparaxes, which were placed in a groundwork of Ferns, and were very attractive. A bronze medal was awarded. Mr. Turner, Slough, contributed a group of small plants of Pelargonium, several of which were certificated; also a basket of Picotees. A vote of thanks was awarded. Mr. Dean, Ealing, sent Giant Brompton Stocks, Mimuluses, &c., and was awarded a vote of thanks; and the Rev. A. Rawson, Bromley Common, Kent, exhibited plants and cut blooms of Calceolaria and Cyclototris. Mr. Kingdom of the Shoan Nurseries, Richmond, contributed several very well-grown Gloxinias, and received a vote of thanks. Messrs. Osborne & Sons exhibited Pyrethrum aureum laciniatum; and Mr. E. Holmes, Lichfield, a very pretty Juniper. Votes of thanks were awarded to Mr. Ollerhead for Actus gracillimus, and to Mr. Iggulden, gardener to B. W. Baker, Esq., Orsett Hall, Essex, for a basket of La France Roses.

NOTES AND GLEANINGS.

We are authorised to announce that their Royal Highnesses the Prince and Princess of Wales have signified their intention of being present at the GREAT SUMMER SHOW of the Royal Horticultural Society at South Kensington on Tuesday, the 19th inst. There is every reason to believe that the Show will be an unusually fine and extensive one.

— ON Tuesday last, at the meeting of the Royal Horticultural Society, the Right Hon. Lord Aberdeen, the President, presented a number of MEDALS to the successful exhibitors at some of the late shows, and thanked them for the liberal way in which they had supported the Society during its recent difficulties. He stated that there was now every prospect that, these having been overcome, in another year the Council would be in a position to offer prizes of a more substantial kind than mere honorary awards.

— We are pleased to see by the announcement in the London Gazette that DR. HOOKER, C.B., Director of the Royal Gardens, Kew, has been appointed a Knight Commander of the order of the Star of India. We congratulate Sir Joseph Hooker on this well-merited distinction.

— We have received several letters relative to the DEPRE-DATIONS OF BIRDS in gardens. From them we gather that the bullfinch has scarcely any defenders, and the sparrow and finches few, while the lomatit is credited with doing more good by eating insects and caterpillars than harm by destroying fruit buds. Our correspondent Mr. W. Thomson states that with him the birds mentioned never touch a bud with a rising barometer or in settled weather; but in wet weather or before a storm with a falling barometer they are very voracious, and render bushes useless in a very short time.

— A COMMITTEE has been formed, of which Mr. C. E. Elliott of the Ceramic Court, Crystal Palace, is the Honorary Secretary and Treasurer, for the purpose of providing a suitable TESTIMONIAL to Mr. WILSON, who during a period of twenty-five years has been of such great service to exhibitors at flower, poultry, and other shows which have been held at the Palace. A TESTIMONIAL in money is also proposed to be given to Mr. JAMES MITCHELL on his retiring from the management of the gardens at Newlyth (Sir David Baird's, Bart.), illness of a serious nature precluding the possibility of Mr. Mitchell resuming his employment. Mr. R. P. Brotherton, Tynninghame, Prestonkirk, will be glad to receive donations.

— It has been decided by the Council of the Royal Horticultural Society that a great PROVINCIAL HORTICULTURAL SHOW will be held in June, 1878, at Preston in Lancashire, and we are informed that the needful guarantees have been secured. T. M. Shuttleworth, Esq., of Howick House, Preston, has undertaken the office of local Secretary, and under his indefatigable management we have no doubt the Show will prove a great success.

— REFERRING to the law of planting TREES IN SWITZERLAND on the occasion of marriage ceremonies and the birth of children, our correspondent "A. W." states that it is "not a law, but a custom, accompanied in some Cantons with great festivities. In the Canton of Zurich vineyards are often enlarged on these nuptial occasions. This custom is a very wise

and provident one, as the grassy slopes studded densely with fruit trees testify."

— WRITING to us on the INFLUENCE OF SCION ON STOCK, "W. C. E." says, "Last year a graft of Golden Laburnum was put on a common Laburnum. The graft died, but this year nine or ten shoots have become lemon-coloured. In another case the leaves of the stock are spotted with yellow."

— We have received from Messrs. Dickson & Co., Waterloo Place, Edinburgh, some flowers of DOUBLE CINERARIAS named Queen of Violets, Pink Perfection, Pilgrimage Beauty, and The Prince. The flowers are perfectly double and very fine, the two first-named being the most effective varieties which have come under our notice.

— A GENTLEMAN, "S. B.," who is one of the best cultivators of Tulips, and who is entitled to speak with authority, writes as follows on MALFORMED TULIPS, which were referred to last week on page 411. "The case" (of four blooms being produced by one stalk), "is clearly a case of overgrowth. The bulbs have been kept in compost of too stimulating a nature, and have probably been left in the ground too long, which enables the new bulb to feed as long as any of the fibres retain their vitality. A less stimulating growth and early taking-up of the bulbs are the remedies for this. I should recommend your correspondent to take-up his bulbs within a week after they have done blooming. In this opinion the Rev. F. D. Horner and Mr. Bentley quite coincide."

— "THE FERN WORLD" is the title of a forthcoming work by Mr. Francis George Heath, author of the "Fern Paradise." Mr. Heath's new book, which is in the press and will be published shortly by Messrs. Sampson, Low, Marston & Co., in addition to numerous chapters on the structure, classification, distribution, uses, and "lore" of Ferns, on general Fern culture, "Fern hunting," Fern collecting, &c., will contain descriptions of rambles through the combs and glens of North Devon. Half of the work is devoted to the description, distribution, and culture of British Ferns, and the text throughout will be illustrated by coloured lithographs of Fern groups specially printed from nature, full-page engravings of scenery, &c.

— SINGULAR BIRDS' NESTS.—We recently noticed in the gardens of S. Balli, Esq., Cleveland House, Clapham Park, a sight worthy of the pencil of Mr. Harrison Weir. During the present year a robin built his nest in a specimen of *Erica depressa* which was growing in the greenhouse, and there reared its young, which left the nest the day before the plant was taken to the Crystal Palace Show. The parent birds then found access to the stove and built another nest on the surface of the pot of a flowering specimen of *Nepenthes Hookeriana*. In this nest eggs were laid, but just before they were hatched the bird was found dead in the nest. The nest and eggs remain; and the *Nepenthes*, which has several pitchers, certainly loses none of its attractiveness by the novel addition of the robin's nest and eggs. Mr. Moorman has reported an instance of what he terms the "ingenuity of a tomit."—"During the latter part of the year 1875 a pot about 10 inches in diameter was inverted in the orchard at Coombe Bank, where it remained throughout the winter. On removing the pot in the spring it was found to cover an ingeniously contrived nest. The whole of the interior of the pot was beautifully padded with moss, in the centre of which was a nest full of young birds, the old birds entering through the hole in the top, or what is really the bottom of the pot. The young birds flew away, and during the past winter the pot was removed. On Mr. Christy's return home after an absence of several months he missed the pot, and being a great protector of small birds he requested that the pot should be returned to the same place. This was done early in May, and on the 28th of the same month the tomit had completed its nest in the same manner as before, and had laid five eggs."

— We recently noticed a fine plant of *Ceanothus dentatus* flowering on the south wall of Sudbury House, Hammersmith, the residence of J. T. Peacock, Esq. This is an excellent evergreen flowering plant for a south wall, its blue flowers being produced in great profusion, and are admirably adapted for cutting for vase decoration. This *Ceanothus* strikes readily from cuttings of the young shoots inserted in sand and treated the same manner as *Verbena* cuttings. In some positions in the northern counties the *Ceanothus* requires the protection of a mat during the winter. *C. dentatus* has smaller foliage and more deeply coloured flowers than *C. azureus*, and it also flowers earlier than that species. Mr. Peacock's ur-

valled collection of Cactuses is in splendid condition; and his gardener, Mr. Croucher, is establishing a choice selection of Orchids, many valuable sorts of which are now flowering. Mr. Peacock's garden is in excellent order throughout.

— AFTER an almost unexampled term of cold weather, which has rendered the present one of the most backward seasons on record, a sudden change has occurred. Sunday last was a brilliant day in London, and the day following was quite sultry, the thermometer in the full sun registering 120°. Since then the heat has abated somewhat, the sun having been more or less obscured by clouds. Bedding-out is in "full swing" in the parks, and will not be completed before July. Warm showers are much needed to assist the free growth of the plants, or half the season will be over before the beds are attractive.

— We have received three letters from correspondents stating that they have gone through the prize list of the CRYSTAL PALACE AGRICULTURE SHOW, and found seven names of prizewinners in the Auricula classes, and four more in the Polyanthus class. They are as follows:—Auriculas—Rev. F. D. Horner, Kirby Malshead, Ripon, Yorkshire; Mr. Douglas, Loxford Hall, Ilford, Essex; Mr. Charles Turner, Slough, Berks; Mr. B. Simonite, Sheffield, Yorkshire; Mr. Jones, Carrow House, Norwich, Norfolk; Rev. Margaret, Lydington, Uppingham, Rutland; and Mr. Cooper, Timperley, Cheshire. Polyanthuses—Mr. G. Smith, Edmonton; Mr. R. Dean, Ealing; Mr. Catley, Bath; and Mr. Hooper, Bath. It is not necessary to publish more on the subject.

— We hear that His Royal Highness the Prince of Wales has given up Chiswick House, the lease having expired, and that Mr. John Wille of South Kensington has been appointed to supply the floral decorations at Marlborough House.

— KLISSONRA in Bulgaria has long been celebrated for the manufacture of ATTAR OF ROSES. During the recent warfare the stills, called kezens, were all destroyed, but the consequent distress of the natives has been relieved by Lady Strangford by supplying them with 110 new kezens.

— ARTIFICIAL flowers, called BAROMETERS, are being now exhibited in a number of Parisian opticians' shops. They are coloured with a material composed of chloride of cobalt. When exposed to sun and dry air the leaves become deep blue; when the air is saturated with moisture they become pinky. All the intermediate shades are easily observed.

— As affording an idea of HORTICULTURAL INDUSTRY in AMERICA we are informed that \$10,000,000 are invested in land, greenhouses, and stock connected with the wholesale florists' business in the vicinity of New York, where there are 45 acres of hothouses. At Union Hill, New Jersey, there are about 20 acres under glass for the cultivation of flowers for the New York market.

A PLEA FOR THE ORCHARD HOUSE—INSECTS.

UNDER the above heading Mr. Hodgson has contributed one of the most pleasant and sensible articles that I have read for many a day. Your correspondent uses a sledge-hammer kind of argument in favour of orchard houses, and I am convinced that it will require something very powerful to prove that these structures, when rightly managed, are not of great value in producing a supply of fruit in inclement seasons. Hitherto this season we have heard little besides wallings on the condition of the Peach crop; but here we have one who is justly jubilant over having 1600 Peaches and Nectarines in one house, and that house heated by what?—"three lamp stoves only used on cold nights when the blossom might otherwise be injured by the frost." Mr. Hodgson, I presume, is an amateur, for few horny-handed gardeners can write so forcibly yet elegantly as he has written on page 395, and few, I imagine, can narrate better practice in fruit-culture. Were I given to envy I should commence with envying both Mr. Hodgson's attainments and his fruit; but I hope I am not, and I am sure I shall be well satisfied if I can now and again be refreshed after my daily labour by the perusal of an article similar to the one referred to.

For some time past I have been silent on gardening matters. I have been quietly working and watching, and had half resolved to give my pen a longer rest, but, to use a gardener's phrase, I am fairly "fetched out of my shell" by your accomplished correspondent. I have a lurking conviction that I am the "scornful gardener" who named the eribbed and stunted specimens, which so often forced their uselessness upon me,

'toy trees.' But I do not call "a cordon Peach tree with 150 fruits on it, and leaves as large as those of the Laurel," a "toy tree." Such a tree demands a nobler name. Toy trees there are in plenty, miserable distorted Apples and Pears which are not worthy of the name of trees at all. It were well if these pigmies had been called by their right names years ago, and disappointment would have been spared to many who have wasted time and space in attempting the cultivation of these crippled monstrosities.

But to the orchard house. These structures, like miniature trees, have been abused, and like the trees have failed. When rightly constructed and reasonably managed orchard houses seldom fail. They are the best of all aids for securing crops of such tender and delicious fruits as Peaches and Nectarines. When these houses are well managed, even when no means of artificially heating them are afforded, the trees in them are as certain to bear as are Peaches on walls when protected with glass and proper attention is given to them.

Many instances of both success and failure have come under my notice in the cultivation of trees under glass. Some people have a dread of unheated orchard houses. Why? Because they are in a measure compelled to make them do that which they ought not to be expected to do. Too often a gardener having an orchard house is at his wit's end to find shelter for thousands of bedding plants. These are placed in the house, and it is kept close on their account at a time when that closeness is prejudicial to the trees. Not many years ago I saw a fine wall of Peaches ruined from that cause, and I have observed that it is not at all uncommon to protect the trees too much during the earliest days of spring when glass coverings are provided. The object of growers of fruit in unheated houses should be to retard the opening of the blossom to the utmost period possible, and then the crop is nearly always safe. My reason for that assertion is, that a large unheated house which has been "under my eye" for twenty years has never failed to produce a bountiful supply of fruit.

INSECTS.—Another primary source of failure must be attributable to insects. If these are allowed to gain the ascendancy in the spring we have no right to expect fruit in the summer. I dislike killing insects, and never do kill them if I can avoid it. I know of a less cruel and far more safe method than that. Quassia water, soft soap, and soot water will prevent a tree becoming weakly by insect ravages if—and here is the essence of the matter—if the solution is applied in time. I never yet knew a man who was "great" at killing insects who was a great grower of either plants or fruit. Those who are really successful do not wait to kill insects, they prevent them. Whoever caught any insects on Mr. James's Calceolarias, Mr. Turner's Pelargoniums, Mr. Paul's Roses, Mr. Hunter's Pines, Mr. Lane's Vines, Mr. Miles's Cherries, and I ask it boldly, Mr. Hodgson's Peaches? Such men have no time to lose in killing insects. They fumigate and syringe just before instead of just after the insects appear. I know nothing more important in gardening matters than adopting timely measures for the prevention of insects. It is far preferable to killing them, more easy, economical, and effectual. Retard the expanding blossoms in unheated orchard houses and prevent insects appearing, and it will be rare that "bad houses" and "bad seasons" will be held hanging on the lips of a disappointed man.

But when and how must prevention begin? is a question I will anticipate. I know something of the dispositions of Journal readers by previous failures on my part to write plainly, and having had to write to explain what I ought to have said at the first. Pleasure is no doubt derived from your pages, but useful practical information is your aim and mine—something not to "look at" merely, but to "work from." That is the main object. I will therefore endeavour to make the subject of the prevention of insects in orchard houses sufficiently plain to "work from."

We will presume the trees were made perfectly clean in winter, not dirty with a daubing of clay, &c., but clean by strong soft soap water or "Gishurst," and that the surface soil was renewed, and it was clean too. Now let spring arrive. Watch for the first swelling of the buds. On the very first signs of growth prepare the insect antidote, and not only prepare it but apply it. Place a peck of soot in a coarse sack and suspend it in a tub full of water, say thirty or forty gallons. Let it remain for a week or ten days, then remove it and throw in a few lumps of fresh quicklime. Skim off the surface scum and a liquid will remain as "clear as sherry." Throw in a few handfuls of quassia chips into a pot or copper

of water, say 3 or 4 ozs. of chips to a gallon, and boil for twenty minutes. When cool mix the soot wine and the quassia water and syringe the trees. Though they have no leaves and no insects, never mind, syringe them and wait for the blossom buds swelling, then syringe again. There will be no insects; never mind, syringe thoroughly just as if the trees were infested, and especially just before the blossoms expand, then wait again. What for? the blossoms setting. This may occupy a fortnight or three weeks, but there will be no insects, the preventive measures will have proved too powerful. After the fruit is set apply the antidote weekly or as often as is required, in the meantime using clear water if you must follow the old rule of syringing daily, which I do not believe in, and your trees will be clean without having had to go through the nuisance of killing insects.

I have more to say on orchard houses, but it will "keep;" the insect question, being the more urgent, has for the present occupied my spare time and your space.—A. N. G.

ZINNIAS.

ZINNIAS are amongst the oldest of our common garden annuals, the first species having been introduced into Europe more than a hundred years ago; as long ago as we can recollect anything about flowers the species *Z. multiflora* was generally found in most gardens. The late Mr. Breck, in alluding to it, said he first became acquainted with it seventy years ago. A few years subsequent to the introduction of that species another was found in Mexico, and was sent to Europe in 1796. This was the *Z. elegans*, a much more showy and handsome plant, with larger flowers, but rather coarse in general appearance. In 1818 still another species was added (*Z. hybrida*); this was from South America, and produced brilliant scarlet flowers, and from this and the other species numerous varieties were raised, comprising all the various shades of scarlet, crimson, purple, orange, yellow, and white. From the time of the introduction of the first species until a very recent date all these varieties continued to be extensively cultivated without any apparent change; the same rather coarse, stiff, and formal flower valued more for its novelty and variety than for any real beauty. The flowers are all bright and very showy when first expanded, but they soon begin to form seed, and the central bundle of florets assume a dried appearance, while the outer florets lose their colour and are anything but ornamental. Such were the Zinnias some fifteen or twenty years ago, when enthusiastic florists were on the look-out for varieties of every kind, and carefully selected all the choicest flowers for the purpose of continued improvement. A zealous French cultivator, in looking over his Zinnias, accidentally noticed a plant which had a double row of petals, and with the enthusiasm of the real lover of flowers, it occurred to him as a tendency to a double blossom; he carefully sowed the seed, and another year was well repaid by other flowers much more doble, but still far from perfect. He persevered, however, in selecting and sowing the seed, and had his reward in the production of a double Zinnia, not equal to those of the present day, but very large, full, and beautiful. They are now grown almost as perfect as the Dahlia, and of all the varied shades of the old single varieties; a splendid addition to our gardens.

Within a few years another species has been added to the list. This is the *Z. Haageana*, of smaller and more delicate habit than the old kind, with flowers of a brilliant orange colour. This, as well as the *Z. elegans*, has been the special object of improvement by the German florists, and several quite distinct varieties originated. Of the old class there is a very dwarf double-flowered variety, growing only 12 to 15 inches high, and admirable for beds, where the others grow too tall. Another variety is the *Z. elegans tagetiflora*, with partially quilled, in the place of expanded, petals, not so showy as the others, but with a very pretty effect among other sorts. In fact, all these double Zinnias are not only very showy throughout all the summer and autumn, but are very pretty for cutting for table bouquets.

Their cultivation is simple. To have good plants in bloom early the seeds may be sown in April or May in pots, in a slight bottom heat, and as soon as large enough potted-off singly or planted in boxes until the weather will answer for removing them into the open garden. They look well in beds or groups, and in this way form a showy mass, contrasting well with similar beds of Asters. They are also fine as scattered specimens in the border. The soil should be rich, as they are free bloomers and require good treatment to secure free, large,

full, double flowers. No plants can be more safely transplanted, even when quite large, than the Zinnias; their stout upright growth withstands the sun better than most plants. A selection of all the finest colours is a grand acquisition to every flower garden.—(*American Cultivator*.)

THE WEST BRIGHTON NURSERIES, CLIFTONVILLE.

Visitors to Brighton during the past four or five years have noticed with much pleasure the beautiful grass plots, shrubs, and ornamental flower beds known as Queen's Gardens. Where these gardens now exist only a year or two since there was nothing but shingle and the bare banks of the seashore. Everyone who has been to Brighton knows the force of the wind from the south, which prevents shrubs, &c.,

from attaining any great size unless protected by something that will stand the salt spray uninjured, consequently no one need wonder at the scarceness of vegetation at this fashionable watering place—"London-by-the-Sea."

There is one shrub that appears invincible—that is the common *Enonymus*. It not only grows and flourishes, but luxuriates in the salt sea breeze, and it is principally to this shrub that the residents of Queen's Gardens are indebted for the lengthened beauty and freshness of the carpet bedding so artistically arranged by Mr. W. Miles, the principal manager of the estate and owner of the nurseries known as the West Brighton Nurseries. To Mr. Miles is the credit due for the arrangement of Queen's Gardens and other gardens on this estate, once known as the Stamford estate.

Queen's Gardens are not large, only covering a few acres, but to plant and cause shrubs and flowers to grow where nothing ever grew before deserves recording, apart from the artistic carpet bedding, which is every year so well represented. A bank was thrown up and a hedge of *Tamarisk* planted, and in front of these are five or six rows of *Enonymuses*. These are periodically trimmed into shape and kept dwarf. In front of the *Enonymuses* on the level below are the flower beds in a kind of alcove. You first come to a bed planted with some geometrical design, and a little further on to another, and so on to the end of the gardens. These beds are only separated from the main road by light iron fencing.

The nurseries of Mr. Miles consist of seven houses 100 feet in length and about 14 feet wide, and five pits of the same length, the whole built by Boulton & Paul of Norwich. They are very light and useful houses, well adapted for the purposes of growing such plants as *Alternanthera* and other plants used in carpet bedding. How popular this style of garden decoration has become is instanced by the fact that Mr. Miles grows at least 500,000 plants annually for furnishing carpet beds. Numerous Palms, *Dracenas*, Ferns, &c., are also grown for furnishing purposes; also some very fine *Allsmandas*,

Bougainvilleas, *Crotons*, *Dracenas*, Tree and other Ferns, which often carry off honours at the Brighton exhibitions. *Solanums*, *Poinsettias*, *Linums*, *Bouvardias*, &c., are also grown in great quantities for autumn and winter decoration. *Geraniums* do better at Brighton than many other places. The light, air, and sun suit both the show and scarlet sections admirably. Of the latter Louis Venillot and Glow are found the best for winter flowering, and produce an unfading supply of good trusses during the dull months of the year.

Mignonette is also largely and well grown here. Mr. Miles has always been a lover of this sweet flower, and is the raiser of a very robust and sweetly scented variety. The habit of the plant is sturdy and branching, each plant producing from 12 to 18 spikes from 12 to 20 inches in length. The flowers are nearly white, many of the pipe being half an inch in diameter. It is undoubtedly a fine variety, but its vigour

is probably in some measure due to superior cultivation. It is a cross between Parson's Tree *Mignonette* and the common variety, and comes very true from seed. I send you some spikes of it, which although conveyed in a close box so perfumed the railway carriage that the passengers asked if my little box contained *Violets*.

I submit also a design of one of Mr. Miles's carpet beds, and a suitable mode of planting it, which may be useful to those intending to indulge in this mode of decoration, especially as it is during the month of June when beds of this character are planted. The design is graceful yet effective, and as it is composed of circles or their segments it can be easily transferred to the ground.—M.

[The *Mignonette* is the finest that has come under our notice. It is the same variety that attracted the attention of Her Majesty the Queen at the great

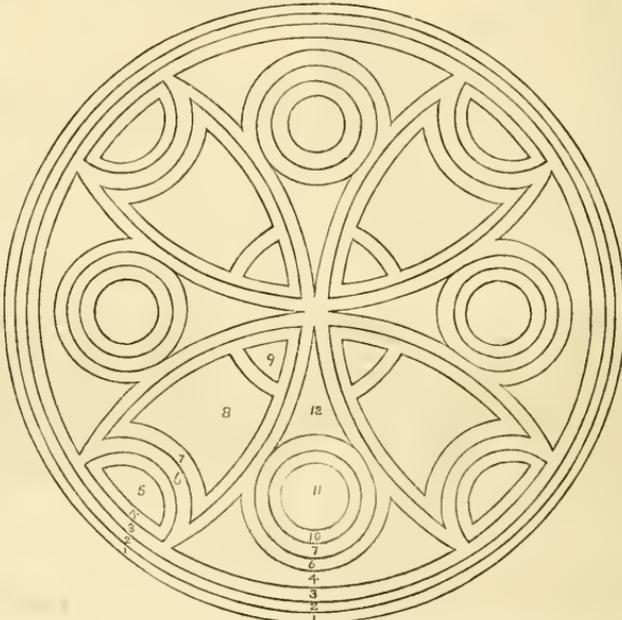


Fig. 59.—CARPET BED AT BRIGHTON.

- | | |
|-----------------------------------------------------|------------------------------------------------------------|
| 1, <i>Echeveria</i> . | 7, <i>Alternanthera paronychioides</i> . |
| 2, <i>Sedum glaucum</i> . | 8, <i>Meibomia Falegnum gibraltaricum</i> . |
| 3, <i>Mesembryanthemum cordifolium variegatum</i> . | 9, <i>Lobelia pumila magnifica</i> . |
| 4, <i>Alternanthera amens spectabilis</i> . | 10, <i>Kleinia repens</i> . |
| 5, <i>Antennaria tomentosa</i> . | 11, <i>Veronica luscana</i> or <i>Leucophyton Browni</i> . |
| 6, <i>Pyrethrum Golden Feather</i> . | 12, <i>Sedum Lydlum</i> . |

exhibition at South Kensington on May 2nd.—[Ens.]

RIDDINGS HOUSE,

THE RESIDENCE OF J. HADEN OAKES, ESQ.

It matters little at what period of the year we visit the gardens at Riddings House, for we are sure of a rich treat while there, and to come away gratified with what we have seen. There are upwards of a dozen fruit houses, many of them of large dimensions, and nearly twice as many plant houses, besides numerous pits and other appendages, all filled to overflowing with choice collections of plants, many of them of recent introduction, all free from insects and in excellent health. At Riddings the visitor may look, and look again, "and still find something new—something to please, and something to instruct." After a short ride on Whit-Tuesday afternoon from Mansfield to Pye Bridge on the Erewash Valley line of railway and a walk of a mile from the station through the village of Riddings I found myself in company with Mr. J. Ward, who soon introduced me to the numerous treasures under his extensive charge.

Near the entrance to the mansion there is a spacious corridor 140 feet long, which opens into other houses. It has a fine ornamental exterior, and internally it is fitted up with great elegance. The promenade is furnished with Minton tiles, and along each side there are recesses for flowering and foliage plants. Here are fine specimens of *Aralia Sieboldii*, *Begonias* of the tuberous-rooted section, the best being *Vestivius*, a very fine *Chorozema varium*, *Grevillea robusta*, *Rhododendrons*, *Tacsonia Van-Volkemi* trained to a large wire frame, *Rosea* in pots in large profusion, *Clorodendron Balfourii*, and *Bougainvillea glabra*. The two latter plants quite enlivened the corridor with their glowing brightness, and though they are inmates of our stoves they appeared quite at home in their cool situation. The first compartment leading out of the corridor is the Orchid house. It contained a mixture of Brazilian and Mexican Orchids, and was quite aglow with

plants in bloom. Of *Cypripediums* there was a good assortment, and I was fortunate to find so many of them in flower. *C. villosum* was one mass of colour, and *venustum*, *barbatum*, and others were well represented; but for simple beauty *C. niveum* bears the palm—its waxy white flowers marked with minute chocolate spots rising above its marbled green leaves are very effective. *Dendrobiums* were strong in numbers, and of those in flower I noticed *D. lituiflorum*, *D. crystallinum*, *D. heterocarpum*, *D. nobile*, *D. Bensonianae*; and such as *D. thyrseiflorum*, *D. chrysotoxum*, *D. speciosum*, and others were making excellent growths. *Odontoglossum Roezlii* is a great favourite; it is a charming Orchid from New Grenada, resembling the beautiful *Odontoglossum vexillarium*. It had made three growths and contained nine blooms; and *Odontoglossum Phalanopsis* had twenty-five blooms expanded. There was a good plant of *Oncidium flexuosum*,

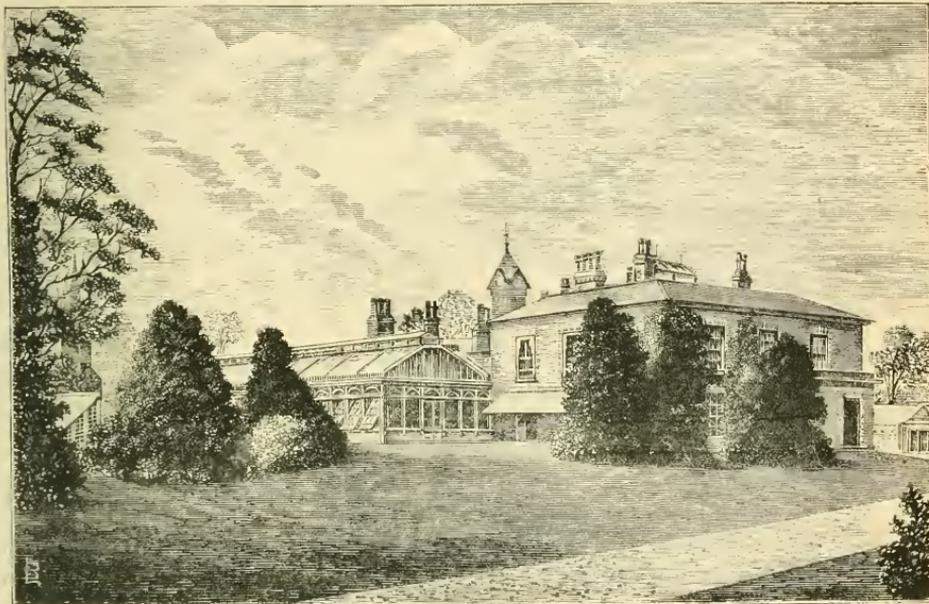


Fig. 60.—RIDINGS HOUSE.

which is fine for cut flowers; and *O. papilio*, the Butterfly Orchid, was quite attractive in its way. *Calanthe vestita*, *Vandas*, and *Cattleyas* were all in strong force. In striking contrast to the Orchids were a few fine-foliage stove plants for table decoration, and a large plant of the brilliant *Anthurium Scherzerianum*, the finest of all stove plants, of easy culture, and a most abundant bloomer. We next enter a greenhouse. Down the centre is a bed planted with *Camellias* interspersed with *Callas*, *Spirea japonica*, *S. palmata*, *Calceolarias*, *Yuccas*, &c. Communicating with the corridor is the stove, 30 feet long, furnished with a large bed in the centre for specimen plants, and benches all round for half-specimens and such as are used for dinner-table ornamentation. Of those that will probably have to do duty in the exhibition tent during the season I noticed fine examples of *Ixora Dixiana*, *I. Williamsi*, *I. coccinea superba*, *Croton interruptum*, *C. angustifolium*, *C. Johannis*, *C. variegatum*, *Allamanda Hendersoni*, *A. Schottii*, *A. grandiflora*, *Dipladenia amabilis*, *Pandanus ornatiss*, and *P. Veitchii*. Of plants for the dinner table there was a large assortment, including many of the leading *Dracenas*, *Crotons*, and small *Pandanus*.

Leaving this block of houses we came to another range, 80 feet long, in two compartments. The first is an orchard house containing large standard *Peaches*, *Nectarines*, and *Plums* planted down the centre. In front of these are smaller trees in pots, and the back wall is clothed with *Peaches* and *Necta-*

lines. The standards and trees in pots are carrying heavy crops, and those on the wall moderate crops. Some of the *Plums* are quite loaded with fruit. The second compartment also contains *Peaches* and *Nectarines* planted out as standards, and others trained on the walls.

The Palm stove, which is also in two compartments, is 50 feet long. Here are capital examples of the elegant *Latania borbonica*, *Scaevola elegans*, *Phoenix dactylifera*, *Arca lutescens*, and *Kentia Fosteriana*; also a mixed collection of stove plants, including healthy examples of *Eucharis amazonica*, *Vincas*, *Celosia pyramidalis*, *Begonias*, *Marantas*, and the singular *Reidia glaucescens* with its curious flowers depending from the under side of the leaves. Near this house is a new propagating pit that Mr. Ward has just had erected. It is 30 feet by 12, in two compartments; a hot-water tank supplies the bottom heat, and over this is cocoa-nut fibre for plunging in the pots. It is glazed without putty on the outside, and is perfectly free from drip. Round all the houses we have just passed through there are pits of various depths, about 4 feet wide, all furnished with hot-water pipes. These pits are filled with *Pelargoniums*, *Zonal Geraniums*, and a few greenhouse plants, such as *Erythrina Crista-galli* and *Statice profusa*.

We now pass to the opposite side of the mansion, and enter the Fern house and conservatory, each 40 feet long and 18 feet wide. The latter communicates with the mansion, and in the evening when Mr. Oakes entertains his friends

at dinner he has an ingenious way of lighting it with gas. What in most houses is a blank wall is here obscure glass, placed about 2 feet from the wall and parallel with it; a gas pipe runs between the wall and the glass, studded with eighty jets, and after dusk these are all lighted, and the reflection among the Ferns and other plants has the appearance of very powerful moonlight. The Ferns are in luxuriant health. *Cibotium spectabile* in a 16-inch pot has fronds 10 feet long by 3 feet wide; *Cyathes medullaris* in an 18-inch pot has fronds 12 feet by 3 feet wide; *Alpholia excoela* has fronds 7 feet long by 3 wide, a noble plant; *Cibotium princeps*, fronds 7 feet by 3; and *Dicksonia antarctica* is in fine condition. There are also numerous smaller plants deserving notice. *Adiantum farleyense*, the king of the *Adiantums*; *A. cuneatum*, *A. formosum*, *A. concinnum latum*; *Lomaria gibbs*, *Gymnogramma Lancheana*, *Davallia Mooreana*, and many others are in admirable condition.

The next house we entered is the early vinery, and here we have proof of Mr. Ward's skill as a fruit-grower. The first Grapes were out on the 26th of April, and at the same time there were a few bunches still left of Lady Downe's preserved in bottles of water. Mr. Ward had managed to "circle the year" with Grapes. Nearly all the bunches were cut at the time of my visit, but those left were of a splendid colour and were perfect in bloom. Under the Vines I observed a large assortment of *Camellias* making their growth. The adjoining house is the second vinery in order of forcing, and is planted entirely with *Msdreeff* Court, two-year-old Vines, each carrying three bunches. In this house *Eperias* and *Azaleas* were making their growth. In an adjoining greenhouse I noticed *Eriostemon*, *Correa*, *Neriums*, *Rhynchospermums*, *Abutilons*, *Valotas*, *Statives*, and *Fuchsias*. Near this is the *Azalea* house 60 feet long and 14 feet wide filled with *Azaleas*, which were making their growth. The pleasure grounds are not extensive; *Hollies* and *Yews* appear to grow with great luxuriance, and are trained with as much care as *Azaleas*.

We next crossed the village to what is called the fruit garden. Here is another village of glass houses. The first, a small Peach house 24 feet long by 14 feet wide, contains a Peach and Nectarine tree, each carrying a heavy crop of fruit that would be ripe by the end of May. The second house is of the same size as the last, and contains the same number of trees, the fruit to come in for succession. The trees are making capital growth, and promise well for another season. The late vinery is 80 feet long and 14 feet wide. The border is inside the house, and there is no provision for the roots to go outside. The sorts chiefly grown in this house are *Black Alicante*, *Trebiano*, and *Lady Downe's*. It was from these Vines that Grapes were preserved till new Grapes were ripe. The orchard house is 80 feet long and 14 feet wide. Pears and Plums are grown in pots, and *Peschies* and *Nectarines* on the back wall. I have here to record a slight failure, for only a few of the Pears were carrying any fruit. There is no heating apparatus in the house, and Mr. Ward attributes the scarcity of fruit to the wet autumn and the want of sunshine; the trees are in excellent health. Passing out of this house we entered a vinery 130 feet long and 14 feet wide. The Grapes were all thinned. The foliage is fine and the bunches regular, and will average 4 lbs. each. The syringes has never been used since the buds were just breaking, but no trace of red spider is to be seen. The roots are all inside, and during the growing season the border has had repeated drenchings of tepid water diluted with guano and sheep dung. The surface of the border is frequently dusted over with guano previous to sprinkling it with water, and to this practice Mr. Ward attributes his freedom from red spider. On the back wall is a row of Vines in pots for early forcing, partly to take the place of the early house which is to be replanted. A few Figs in pots are well loaded with fruit. The next house in order is a span-roofed greenhouse, containing a choice collection of *Heaths* and other greenhouse plants. All the *Heaths* are trained with the greatest care, and every plant is in robust health. Among the *Ericas* I noticed *Erica Candolleana*, *E. jasminiflora alba*, *E. mutabilis*, *E. Ationians*, *E. turgida*, *E. Parmentieriana rosea*, *E. tricolor*, and *E. Spenceriana*. Besides the *Ericas* there are some fine *Boronias*, *Aphelexes*, and *Dracophyllums*.

Strawberries are forced in abundance, and for this purpose a house is provided 70 feet long by 14 wide, in two divisions. The first division was cleared out and planted with *Cucumbers* and *Melons*. From this range Mr. Ward has three different crops: first *Strawberries*, succeeded by *Cucumbers* and *Melons*, and next *French Beans*, which continue to produce pods till the house is required again for *Strawberries*. The *Pine stove*

is 60 feet by 16, with a path down the centre, and the *Pines* plunged in beds on each side. They were in excellent health, and gave promise of useful fruit. In proximity to the above is a pit 40 feet by 18 for successional *Pines*, and so constructed that all the plants are near the glass. They are in 8 and 10-inch pots, and in capital health. I omitted to mention when speaking of the greenhouse 70 feet by 20, that it is surrounded by a useful pit heated by hot water. It is serviceable during the early part of the winter for preserving *Strawberries* and, when they are removed, for forcing *Potatoes*. Mr. Ward, besides his extensive chase at *Riddings House*, has the care of the gardens of *C. Oakes, Esq.*, and there I saw some excellent Peach houses and *vineries*. During his lengthy career at *Chatsworth* he was well trained in fruit and plant culture by Mr. Speed, and now he does honour to his excellent master. Mr. Ward is also greatly aided by a liberal employer, who is interested in everything connected with horticulture, of which he is a great patron, as the extent and condition of his gardens testify.—Q. R.

THE EXTIRPATION OF INJURIOUS INSECTS.

The following is abridged from an important paper read by Mr. Andrew Murray at the Society of Arts on the 5th inst. :—

The great majority of vegetable-feeding insects do not feed on all kinds of plants indiscriminately; most of them are restricted to one kind of plant, and if by cultivation of that plant its numbers are enormously increased, so will naturally be the number of the insects that feed upon it, while, if we should cease to grow that plant, the number of the insects would correspondingly diminish. Thus, for instance, if a district is almost entirely in pasture there will be very few *Wheat-feeding* insects in it, but if it is turned into a *Wheat* country they will be in myriads. If these numbers reach such a pitch as to deteriorate the crops the remedy is plain. Change the rotation, and grow some other crop instead of *Wheat*. Allow me to illustrate this by an actual example. There is nothing like a real instance for bringing a fact home to our minds. Last summer I spent the month of July at *Broadstairs*. In my rambles about the place I was immediately struck with the *Wheat* crops. At a little distance they looked tall and strong, but on examining the ears I found them only three-quarters filled. The blade or leaf was throughout almost entirely white and dry, and I have no doubt that if I had asked any farmer what was the cause of the poor ears he would have said drought, as shown by the bleached and dried-up leaves; and if his assumption, that the bleaching of the leaves was due to drought, had been true his conclusion would have been quite right. It was the deficient action of the leaf that stayed the flow of nutriment to the ear. But although he would be quite right in describing the deficiency of weight in the ear to the failure of the leaf, he would in this instance have been wrong in ascribing the failure of the leaf to drought. It was due to the mining of the larva of a small fly named *Agromyza graminis*, which lays its eggs under the skin of the leaf at its tip. From thence the young larva mine downwards, feeding on the parenchyma of the leaf, leaving nothing behind them but the empty husk, consisting of the upper and under walls of the leaf.

Now a change of crop, if carried out over a sufficiently wide district, supplies an easy and effectual cure for the attacks of this insect. Its habits lend themselves to such a remedy. It feeds only on *Wheat* and a few allied pasture Grasses. The insect is only an annual. If it could be banished for one year it would be banished entirely, or until reintroduced. Now, if there were a controlling authority in that district, what would be easier than to say to the farmers, "Gentlemen, in the common interest you will substitute *Barley* for *Wheat* in your next year's rotation?" The fly, deprived of its proper nidus, must then either lay its eggs in an unsuitable place where they will perish, or have recourse to the pasture fields for *Tritium repens* or other suitable Grasses. By this of course the fly would not be exterminated, but its numbers would be so reduced as to render it comparatively harmless.

The next means of extirpation to which I shall advert is burning the nidus, in which the insect, in whatever stage, passes the winter, and I may take as my example the species of a small fly belonging to the genus *Chlorops*, some of which attack *Wheat*, others *Barley*, others *Rye*, &c. The fly remains about the ear for many weeks after it is thrashed, and may be found in great numbers in winter in a semi-torpid state among the chaff. Now is it not an intolerable abuse of the privilege of doing what a man likes with his own, that my

neighbour should be allowed, for the sake of small profit he can make out of his chaff heap, to preserve such a focus of infection to destroy my future crops? He should be compelled to burn it. In like manner we want some one to compel the burning of the heaps of couch-grass and weeds gathered from foul land instead of keeping them to rot into manure. These are the foci and shelter-place of wireworms and other pests, and contribute largely to their spread.

To the same class of remedies belongs the local treatment which I have recommended for the Onion fly. The plants attacked are readily distinguishable from those that have escaped. The former are sickly, flaccid, and yellow; the latter firm, erect, and green, and those attacked can easily be picked out and burned. Each plant attacked contains a nest of larvae in the stem or bulb. If these are destroyed the whole future family is annihilated. The Carrot plants attacked by the Carrot fly are equally easily distinguished and destroyed, but it is not certain that the grubs in them keep always to the same root. But both with them and similarly destructive insects that infest the Cabbage and Turnip, a year's avoidance of that crop throughout the district will relieve it from them.

Next comes the remedy, in the shape of some application that is fatal to the insects. This is the plan adopted in America for the destruction of the Colorado beetle, where Paris green is dusted in powder or sprinkled in solution over the larvæ on the Potato plants. It is the plan used by our horticulturists to get rid of the red spider in their hothouses where sulphur is the medium. Manufactured into Gishurst compound or made up into some soapy solution sulphur is also largely used by them to destroy green fly. Sulphur has also been successfully used on a small scale against the Hop fly, and might be advantageously used on a large scale. There are various other supposed specifics (such as hellebore for the Gooseberry caterpillar, &c.) which are more or less in favour with different individuals. As a remedy, however, such applications seem better adapted for individual protection than combined stamping-out, although it would be foolish to forego the advantage of using them where they seem to meet the requirements of any special case.

The picking and gathering of the individual caterpillars or perfect insects is a remedy that has been tried largely on the Continent, but without any marked success. For ordinary crops it is much more clumsy than a change in the rotation, and for crops which cannot be so dropped out of rotation, as fruit or forest trees, it is almost impossible to collect the larvæ efficiently. At the same time it is right to add that this *echenillage* or caterpillar-collecting can scarcely be said to have ever (any more than any other plan) had a fair trial, it having generally been conducted without regular system or combined and simultaneous action over a wide extent of country.

There remains the last refuge of all invaded countries—namely, destroying the resources of the country before the invaders, that they may perish for want of food. This can rarely be necessary, but beyond doubt it will be the proper course to follow should the Colorado beetle gain a footing in this country. In that event the first that we shall hear of it will be that the larvæ has appeared in some Potato patch near Cork or Londonderry, Liverpool or Glasgow. The instant this is perceived the vines of the Potato field should be cut to the ground and Paris green scattered over the field.

But that is not a course that can be adopted even in a case of such urgency and importance, unless there is some central motive power having the necessary authority to act, for the notice that the Colorado beetle will give will be very short; the larval stage in which alone it can be successfully encountered only lasts about a fortnight, and, if no previous preparations have been made, I leave anyone who knows the slow grinding of our administrative mills to say what chance there is of the larvæ having grown big enough to be noticed; of somebody having noticed it and reported it; of the report being considered and a course of action resolved on; of officers or agents being appointed to act; of their providing the necessary apparatus; and of their reaching the spot and putting them in operation—all within the short space of fourteen days.

COMPOSTS AND WATERING.

UNDER the above heading you have published some remarks on page 274 which practical cultivators will appreciate for their soundness and common-sense character. Elaborate formulae for composts were once regarded as of great importance. Even now instructions as to the relative proportions of particular

soils for certain plants are so precise as almost to lead to the supposition that the soil is eaten by the plants. The soil, it is well to remember, is not food but only a vessel for containing it. Various soils contain different relative proportions of plant nutriment, for there are rich soils and poor; and plants, like animals, differ in their alimentary requirements—hence the different characters of soils as containing particular food become necessary in plant cultivation.

For all practical purposes there are only two distinct kinds of soil—namely, loam and peat. As a rule plants which are evergreen in character and which have hair-like roots thrive best in peat soil. Such plants are not robust growers, and do not require strong food; deciduous plants, being quicker growers and greater soil-exhausters, require a richer larder—loam. To a practised eye the nature of the plant and the character of its roots are sufficient to indicate the proper soil for its requirements. Some plants, such as evergreens of free growth, like Camellias, succeed well in a mixture of peat and loam. Peat alone, except it is very good, is not sufficiently sustaining—the larder is too scantily furnished. Some free-growing plants with very fine roots also flourish with a share of loam in the peat, such as Achimenes and Gloxinias. All the plants named will also grow well in all peat if it is good, and in all loam if it is suitable; but all peats are not good, and all loams are not suitable, hence the mixing of the two soils becomes necessary.

In plant cultivation as much depends on the condition of the soil and its management as upon its nature. A good cultivator can grow plants well in almost any kind of soil, whereas an indifferent grower cannot grow them when he has soil at his command exactly suitable were it well managed. The best of soil can be rendered inert by incorrect management, and poor soil can be made sustaining by skilful treatment. Much excellent soil is ruined by slovenly or inefficient drainage and careless watering; while, on the other hand, soil poor or indifferent in its nature is rendered fertile by applications of liquid manure.

There are scarcely any loams but which, with the aid of manure in a solid or liquid form or both, will grow ordinary softwooded decorative plants well, such as Fuchsias, Geraniums, Balsams, Chrysanthemums, Cinerarias, and plants of a like nature; but to grow Heaths well good peat is indispensable. The cultivator can increase the fertility of loam, but he cannot make bad peat good, because the value of peat for such plants consists in its mechanical as much as its chemical nature. It is no use, therefore, purchasing good sorts of Heaths unless good peat is provided to grow them in, and it is no use purchasing good peat unless it is placed in the hands of one competent to manage it.

Where one failure occurs in plant cultivation from unsuitable soil there are ten which arise from incorrect watering, and nearly as many from insect ravages and general uncleanness. In the potting of plants it is natural for the manager to pay particular attention to the suitability of the soil, also to the drainage of the pots and to the manner of potting. The soil may be of the best, and the plants may be potted in the best manner; he may have potted them himself, but he cannot always water them, and all the good that has been done in soil-selection, preparation, and application is undone in watering if a competent and careful man is not in charge. A plant that has taken years to grow may be ruined by a day's neglect. I should be sorry to fall in with the vulgar error that young men are necessarily careless, for I know that many of them are both attentive and skilful, and are valuable aids to the responsible manager, but others again I know are not so. It were well if all young gardeners would reflect that not only their own success depends upon their assiduity and care, but that the reputation, character, and livelihood of others are often in a great measure in their keeping. I think if that were so fewer plants would be injured by careless watering, and fewer complaints would be heard of "wrong sort of soil."—A NORTHERN GARDENER.

METROPOLITAN TREES.

NEVER before was the importance of trees so fully recognised as now, and especially in towns and their vicinity, where the disposition to plant them is greater than ever it was before. We need not wonder at this, for there are few objects in nature having richer points of beauty than a well-grown tree. Without trees our parks and gardens would be flat and monotonous, but with them the surface is made picturesque and the beauty

of other objects becomes enhanced. The infinite variety of the forms of trees and their tints of light and shade evoke feelings of admiration. In spring they give us the idea of freshness and gaiety with softness and delicacy; in summer they afford shade and shelter; and in autumn their variety of rich glowing tints accord admirably with each other, and form splendid masses of colour superior in depth and richness to that of any other period of the year. It is astonishing how much variety may be produced by the artistic disposition of trees even in town gardens. In the London parks the Beech, the Elm, the Lime, the Horse Chestnut, the British Oak, and the common Ash are represented, also the Plane. The Plane tree holds a distinguished place as a town tree, for it grows freely almost anywhere, and its beauty is generally acknowledged. There are other trees of a medium size equally suitable for metropolitan parks and gardens.

The Mountain Ash (*Pyrus Aucuparia*).—This, though one of our smaller trees, is by no means unworthy of notice. The foliage is light and graceful, and the colour a lively green. The branches become elongated and bent down under the weight of their verdure in spring and produce fragrant cream-coloured flowers, which as the autumn advances are succeeded by bunches of coral-red berries. It is a pleasing tree, and a favourite around the metropolis.

The White Birch (*Betula alba*).—This is comparatively a small tree, but it makes up in lightness and elegance for its deficiency of size. It has been well characterised as the light, airy, pendant Birch. As an ornamental tree in landscape effect it cannot be surpassed. Coleridge awarded the palm of beauty to it, calling it the most beautiful of forest trees—"The Lady of the Wood."

The Hornbeam (*Carpinus*).—This tree is better known as a hedge shrub than as a timber tree, yet when allowed to grow unmulcated it frequently attains a height of 50 feet. It very much resembles the Beech in its appearance, although its head is still closer and more round. It thrives in situations where some other forest trees would dwindle away or make but little progress. The leaves adhere to the branches long after vegetation appears to have ceased, rendering this tree very valuable as a shelter.

The Sycamore (*Acer*).—This is a tree of but second-rate pretensions, but in the London parks it frequently equals in magnitude trees of the first rank. Its foliage is thick, and affords an impenetrable shade. Its spring tints are tender and glowing, while the deep green of its summer hue harmonises with its massive form, and the brown and reddish tints of the fading leaves in autumn produce a beautiful effect. The bark frequently peels off in a manner similar to that of the Plane.

The Poplar (*Populus*).—There are several fine species of this tree. The Black or Italian Poplar (*Populus nigra*) attains to a large size in a comparatively short space of time. The foliage is of a pretty pale green, the leaves are smooth and shining, and, as may be observed in Poplars generally, they flutter with the gentlest breeze, thus producing ever-varying shades of green sparkling in the sunbeams. It generally possesses a fine stem and an ample head, and when planted in an appropriate situation often appears very ornamental.

The Lombardy Poplar (*Populus fastigiata*) is a tree of the most rapid growth. It shoots up in a spire-like form, the stiff appearance harmonising well with buildings, and its growth not being impeded by the presence of smoke it is peculiarly adapted for a town or city tree. This Poplar, from its tall and slender growth, possesses a beauty perhaps peculiar to itself, for when assailed by the wind it forms a waving line, gracefully bending from the breeze.

The Aspen (*Populus tremula*) is an elegant tree, rather slender for its height, and pleasing in outline. It has a clean straight stem, the branches shooting out horizontally to form the head. As the tree advances in growth the branches gradually assume a pendulous character. The leaves are of a fine light green, and are in a constant tremulous motion. This tree grows well in all soils except clay. The roots spread near the surface.

The Acacia (*Robinia*) is an elegant and ornamental tree. It must ever be admired on account of its light and delicate foliage and its fragrant flowers. Its pendant form, when arrived at maturity, must cause it to be regarded as one of the first ornaments of our parks and pleasure grounds.

The Tree of Heaven (*Ailanthus glandulosa*).—This handsome tree is a native of China, but it bears our winter well. It is a fast grower, and many specimens are to be met with in the neighbourhood of London. Some beautiful examples can be

seen in Kensington Gardens from 30 to 40 feet high. Its fine pinnated leaves and their rich green colour impart to it great distinctness and beauty.

The Weeping Beech (*Fagus sylvatica pendula*) is a tree of great beauty. Unlike many weeping trees it grows upright, its branches afterwards descending in all sorts of fantastic shapes. No tree in Kensington Gardens elicits so many expressions of admiration, where its branches form a dense arch over the long flower walk, and produce a striking effect. In the same garden the Weeping Ash is noted for its regular umbrella-like shape, and forms a beautiful head when grafted sufficiently high.

The Willow (*Salix*).—There are numerous varieties of this tree. The Weeping Willow (*Salix Babylonica*) is perhaps the most ornamental, beautifying the margins of lakes and ponds in parks and pleasure grounds by its graceful pendulous branches. It grows to a large size and attains a considerable age, and when appropriately planted and its branches dipping into water the effect is highly picturesque.

Pine Trees (*Pinus*).—Two of the most hardy and picturesque of this genus are the Cedar of Lebanon (*Cedrus Libani*) and the Scotch Pine (*Pinus sylvestris*), and these are very difficult to cultivate in town gardens, but in a more congenial atmosphere they form handsome trees.

The Deciduous Cypress (*Taxodium distichum*) is a very ornamental tree, its graceful form and pleasing colour making it highly appreciated. The leaves are, like the fronds of Ferns, divided into narrow leaflets, which in autumn fade into a rich tint before they drop off. It thrives fairly well in suburban gardens.

The Tulip Tree (*Liriodendron Tulipifera*).—This has been recommended for a town tree, but the climate of London does not appear to suit it, for where there is one good specimen there are twenty bad. Its branches die without any perceptible cause. The foliage of this tree when healthy is certainly very beautiful both in spring, summer, and autumn.

The Walnut (*Juglans*) and the *Spanish Chestnut* (*Castanea vesca*) have also had advocates for town planting. I object to them for that purpose on account of their fruit, as it is almost impossible to keep the boys from damaging the trees.

One great principle in forming beautiful trees or groups in woods or parks, so that they shall ultimately be healthy and picturesque, is never to plant too thickly. Trees for ornament will not require to be pruned up to such a height as those grown for timber. In growing trees for beauty it is necessary to avoid the mutilation so frequently indicted by barbaric pruning. A small pruning knife (with the exercise of foresight and good taste) is all that is needed to form a beautiful tree, provided it has room to grow and spread. In concluding these remarks I would especially draw attention to the importance of the proper preparation of the soil before planting; and efficient draining is also very important.—N. COLE.

NOTES ON VILLA AND SUBURBAN GARDENING.

WHERE trees abound and much damage has been done by the late boisterous winds it will be necessary to gather up all pieces of broken wood and give all lawns, paths, &c., a good sweeping. Lawn grass grows faster now than at any time during the season, and requires mowing very frequently. Should any bents prove too long for the mowing machine they must be cut off with a scythe. An occasional run-over with this implement in the early morning while the dew is on the ground (for the bents can be seen better then than during the heat of the day) keeps all in proper order for the mowing machine during the rest of the year. While the grass grows fast weeds have the same advantage, and must be kept from all beds and borders by frequently hoeing and stirring them. Any shrubs which have been newly planted must not be permitted to suffer by want of water, a copious supply of which enables them to become the sooner established in their new situations, and mulching where practicable should also be adopted. Hollies and many other newly planted shrubs are none the worse for casting off a great quantity of their foliage; it is almost a certain sign that they are forming roots and will do well.

Clematis, Roses, and other climbers on walls require attention now. Regulate their growths and prevent them from becoming a tangled mass. Timely attention in this respect is especially requisite with Clematises, the young growths of which soon become matted together and cannot be separated without much injury being done. The late winds have done some damage to Virginian Creepers, Ivy, &c., which must be fastened again in their intended positions. A good washing either from a syringe or garden engine will do much good to Roses on walls, helping to keep off fly and other marauders. The Gloire de Dijon,

Deviensienis, and Maréchal Niel are now just coming into bloom. One of our gayest and finest of Roses to bloom on a wall is Sir Joseph Paxton. It always produces flowers in great profusion, but is generally very much attacked by the worm in the bud. Cambrésien in variety are very pretty for covering walls, and now is a very good time to choose a selection for this purpose, as the plants are just coming into bloom. The pretty Ampelopsis Veitchii is now showing its little red leaves, and ought to be in every collection. We know of no plant that will take greater hold of walls than this. Roses of all kinds, whether in bells or borders, will also be benefited by a good washing from a garden engine. Besides the common form of the worm that generally curls in the leaves and eats into the buds, we have found on our Roses a yellowish green caterpillar which has made sad havoc among them. Hand-picking is the best mode of eradicating them, though it is tedious work. Liquid manure may now be beneficially applied to Roses if the weather is at all dry, afterwards mulching the surface of the ground over the roots with manure.

We have been looking over our fruit crops and find the effects of late frost only too apparent. Currants and Strawberries are looking well and showing abundance of fruit, but Peaches, Apricots, Plums, Pears, and Apples will be very scarce. The trees were laden with blossom, and at one time abundant crops were anticipated. Strawberries we have said are promising abundantly, and must have something laid between the rows and around the plants to prevent the fruit from becoming gritty after heavy rains. This cannot be done too soon. Some persons use the mowings of grass, and it is better than nothing, but it harbours slugs, and in wet seasons tends to promote decay of the fruit. The best of all coverings is undoubtedly clean chopped straw; but if the cleanest of the litter from the stable be shaken out and exposed to the weather it soon bleaches, and makes a very good material for placing between them, and is very little inferior to new straw. Strawberries are gross feeders, and will take any quantity of either clear or liquid manure water while swelling their fruit.

In the kitchen garden weeds must be kept under. The hoe cannot be used too freely, for moving the surface of the ground is highly beneficial to all growing crops. Thin out Parsnips, Carrots, and Onions as soon as the plants can be conveniently handled. Much injury is every year caused by delaying such work unnecessarily. Potatoes, notwithstanding being cut down by the frost, are looking fairly well, and will soon be ready for being earthed up. This work, too, should be done as early as possible. Peas are now in bloom, and we have stopped our earliest in order to be able to gather as soon as possible. They are two or three weeks later than last year. Draw the soil to other advancing crops, and place sticks to them as required. Both Dwarf and Runner Beans are now through the ground, and will also require to have the soil drawn to them, and stout sticks placed to the Runners unless they are pinched and allowed to remain in the ground after the style adopted in market gardens. Both plans have their advantages; but we think larger produce can be gathered from plants supported than those which are not. In very dry weather no crops are more benefited with water than Beans. Make other sowings of small salads, Lettuce, Turnips, &c., as required. Prick out Celery from seed pans, &c., that stout and stocky plants may be procured for planting in the trenches.—J. W. M.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

In rainy districts it must be a matter of great difficulty to keep the ground free from weeds. We neglect no favourable opportunity to destroy them all through the spring months, and still they come. At present the garden looks very tidy; but in parts where the surface has not been raked, or trenched since last summer or early autumn we noticed weeds, and had it hoed over again at once. Whatever pressure of work there may be in any department—and at this season the pressure is severe—we still make a point of destroying every weed in the grounds.

We made up the last planting of Camellifers with some spare plants. A few of the plants had been destroyed by rabbits and other causes. We have not during the last twelve years ever been so late as we are now with all sorts of early vegetables. The main bulk of the crops are making very good growths, and though late they will be abundant and of good quality, except the early Potatoes, which, though slightly protected, have suffered severely. Not only were the tops cut off by the frost, but night after night the freezing process was repeated until stem and leaf were utterly destroyed; then fine weather returned some of the varieties showed themselves to be possessed of much more recuperative force than others. As far as our experience goes Penn's Early Market is the most easily injured and takes longest to recover, whilst Veitch's Improved Ashleaf is the hardiest of the garden sorts. Nearly all the garden varieties have now been earthed-up, and if the crop is

late we trust it will be tolerably good. Until now a sowing of Lettuce has been made about once in two weeks, and from each sowing a few are transplanted on rich ground. Seeds of other salads have been sown as they are required. Mustard, more especially, has been much eaten by the fly or beetle. A good preventive in the case of Turnips or the Brassica tribe is spent hops from breweries or malt houses used fresh and strewed thickly amongst the plants; but this does not answer for salads, and of these we find the best plan is to sow a little under glass and often. The early Peas are in the blooming stage, and later sowings have been earthed-up and had sticks placed to them. We have noticed that many persons make the sticks from each side meet closely together at the top in the form of a triangle. It is better to place the sticks so that they are about as wide, or a little wider, at the top than at the bottom. The rows should not be less than 3½ feet apart; in some conditions of soil 4 feet is better, as good crops cannot be expected if the haulm remains in the rows. As Cabbages, Cauliflower, and other such vegetables are cut we pull the stems up by the roots and convey them to the vegetable refuse heap. Where ground is plentiful the old stumps of early Cabbages are useful for cutting from after they have formed succulent young growths. Our ground will be required for Celery.

ORCHARD HOUSE.

Strawberries on the shelves are not doing so well this year as we had had them. The cold winds and dull weather that continued through the whole of the flowering period have had the effect that might have been expected, and the blossoms did not set well. Some sorts have done better than others, and we shall be enabled to note the results. It is certain that some varieties of fruit trees have the blossoms much more hardy than others, and probably Strawberries are the same. It seems that some of the recently introduced French varieties are the worst in this respect. The plants have not required very abundant supplies of water, but the growth is very strong, and when hot weather sets in they will require much attention as regards watering. Peach, Nectarine, Plum, and Pear trees in pots have had the growths stopped, longer or shorter, according to the age and quantity of wood on the trees. It is necessary to avoid forming a thicket of young wood; better allow shoots to grow out farther, and instead of stopping two or even three times it may be better to stop only once. The young wood must be well exposed this year, and to doing that the fruit will also receive the influence of light and heat, without which it would be watery and flavourless. We had an attack of aphid as usual at the time the trees were in flower. We do not like to fumigate at that time, as it might cause many of the blossoms to drop; afterwards the house was fumigated and the pest destroyed. The trees at this season, especially those in pots, require daily attention, as, if any of them show signs of distress from want of water, and if this is permitted to occur two or three times on the same tree, it will not do well that season. Also in regard to pinching the growths, if this is delayed say a week longer than it ought to have been done, will throw the trees back just that time or longer—that is, the lateral growths will be later in starting and will have a shorter period to ripen in and to mature the blossom buds. In such a season as this is, no time ought to be lost.

Oranges and Figs in Pots.—Orange trees in pots and bearing fruit to ripen at Christmas now require a temperature of 65° or 70° at night. The fruit on our trees is as large as a walnut. We had scale and other insect pests on them, but after all the different specifics we can only eradicate the pests by washing the leaves and branches with strong soapy water, taking care not to allow it to settle thickly on the fruit, as this is more susceptible to injury than the thick leathery leaves. We water the trees well, and manure water is of great use, or, what is better, surface-dressings with a compost of potash charcoal, guano, and loam, the first to be equal to both the other ingredients. A handful of this laid on the surface of the pots is a good stimulant. The trees require much water. If they suffer from drought the fruit will be pithy and the skin thick. We shall add to our list the Silver or Prata Orange exhibited by Mr. Rivers of Sawbridgeworth this year. It seems to be even better and the fruit is larger than St. Michaels.

Figs now grow luxuriantly, and must also be aided with rich surface-dressing. The trees must be placed near the light, and must not suffer by want of water at the roots. Our Figs have not had room, owing to the houses being filled with other plants. It is almost better not to grow plants or trees when justice cannot be done them. The Fig seems to do better in pots than almost any other fruit tree, but it must be repotted annually; and at the time of first stopping the young growths, which ought to be the fourth or fifth leaf, surface-dress with rich manure and loam in about equal proportions. As the trees advance in growth the young roots will bite greedily at this rich dressing, and with marvellous rapidity they ramify through it in every part. Red spider breeds very rapidly on the under sides of the leaves, but syringing twice daily with clear rain water warmed a little higher than the temperature of the house

gives vigour and strength to the leaves and is death to the acorus. The Fig is not particular as to temperature, and if 60° to 65° at night is about the best for them, a few degrees higher or lower does not matter. As the fruit ripens syringing must be entirely discontinued; and then is the time for spider, and if the trees are not free from it in a few days every leaf will be desiccated and drop off even before the fruit has time to be entirely cleared off.

FLOWER GARDEN.

By the time this appears in print a large proportion of the occupants of the flower garden will be planted-out. In an ordinary season we should not only have had ours all planted-out but the plants would have started into free growth. As it is there are yet fine beds full of Wallflowers, and one does not like to pull them out until they have nearly ceased flowering. This week they will be destroyed, and the beds will be planted with the summer-flowering plants. Zonal Pelargoniums, Calceolarias, Lobelias, and other plants that are very hardy do not seem to start into growth; the leaves look as if they felt the severe cold and cutting winds. Those of *Lobelia speciosa* have changed from bright green to bronze, and Calceolarias seem afflicted with the "curl." There is no use in uttering complaints when the cause is beyond our control. All that can be done is to keep the Dutch hose at work. All plants of dwarf spreading growth, such as *Verbana*, *Heliotropes*, &c., should be pegged down if they have grown sufficiently. The wind is very apt to twist such plants out by the roots if they are not fastened to the ground with pegs. We shall not plant the *Alternanthera*, *Colocasia*, and *Iresine* out until the weather is somewhat settled. The fierce gales which we have had and are now experiencing cannot last much longer. The lawn must be swept to free it from stones or any other substances likely to injure the mowing machine. After the beds have all been made right for the time the mower ought to be run over the grass, and the walks should also be swept. An air of quiet and of perfect keeping should prevail in the flower garden from this time forth.—J. DOUGLAS.

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

GIVING NOTICE (*Subscriber*).—The question you put would be better answered by a solicitor.

DOUBLE NASTURTIUMS (*J. E.*).—The flowers are very fine indeed, perfectly double and extremely bright in colour. We have grown a double *Nasturtium* very similar to yours, but without seeing your plant or a flowering spray of it showing the foliage and habit of growth we cannot determine whether the two are dissimilar. If it is really distinct we advise you to submit a plant to the examination of the Floral Committee of the Royal Horticultural Society.

DOUBLE POLYANTHERS (*W. M. B.*).—The flowers are the best we have seen. Grow a few plants well, and exhibit them before the Floral Committee of the Royal Horticultural Society.

ROSES (*A Would-be Exhibitor*).—First, it would with some judges disqualify a tree to mutilate it as you propose. I would remark that it is very rarely indeed that a tree with more than one bloom on its looks well, and it is only sometimes in the case of a good Tea or Noisette that more than one are permitted to remain. Second, I know of no way of meeting your difficulty except perhaps to get all at a joint, and so layer your Bess, but this is hardly worth the trouble. Third, seedling Briars are stocks raised from seed, not dug out of the hedges as ordinary Briars are. They are dwarfs. Write to Mr. Prince, Oxford, for them.—D. Deal.

LILIES CANDIDUM WITHERING (*Captain C.*).—Considering that the bulbs are healthy, and the plants until recently grew freely, we can only attribute their extensive decay to the frosts and cutting winds which have latterly been prevalent. We recently saw some Lilies which had been protected from frost by some canvas coverings placed over them, but the plants were much injured by the frost winds affecting them below the coverings, and a few slumps which were simply sheltered on the wind side and had no coverings over them are now the most healthy. Mr. McIntosh of Doncaster, an extensive and successful grower of Lilies, has also informed us that cold high winds are more destructive to Lilies than still, even if rather severe, frosts, and in the future he intends affording his plants side shelter instead of placing umbrellas over them.

EGALITARY GLOUBES (*South Devon*).—If the shade is at all dense we think the *Encalypta* would not flourish under trees. Besides the shade being injurious the soil near large trees would probably be too dry for it. If you have several plants you might plant them in various positions and let us know the result. Do not plant them too soon, or before the weather is settled.

FERN FRONDS (*H. L.*).—The fronds sent are exceedingly healthy and fine. We shall be glad to have details of your mode of culture.

SPIDERA (*HOTELIA*) JAPONICA CULTURE (*C. B. G.*).—Divide the crowns, but not too closely, and plant them out now in rich light soil in the garden,

affording copious supplies of water throughout the season to induce luxuriant foliage and bold crowns. A partially shaded place, but not cooler trees, is the best position to choose. In the autumn the plants may be potted, and they will flower freely in frames or a light window; in fact they will flower in the open ground if you permit them to remain within 8 inches of the base. GOOSEBERRY TREES BARNEY (*H. F. C.*).—As your bushes grow luxuriantly we think they are over-manured, and probably also the growth is too thick. Thin-out many of the shoots, so that those remaining can have light and air to mature them. We should not stop all the shoots to within 3 inches as you have been advised, but should remove many of them entirely. The side growth of the present season is fine, and you may pinch within 6 inches of the base, but we should not stop the terminal shoots until they have grown a foot in length or more. Your remedy lies in thinning out the shoots rather than in stopping them, also in applying manure less freely, or, perhaps, withholding it entirely for a year or two, according to the condition of the bushes.

SOWING SEEDS OF SNOWDROPS—SCARLET ANEMONES (*G. M. W., Essex*).—Seed sowing of the present season is fine, and you may sow in a trench about an inch deep with light sandy soil. Seed saved from a bed of scarlet Anemones will not produce other than scarlet flowers, and even if saved from a mixed bed the seed from scarlet flowers will produce many plants of the same colour as the parents, while others may come dull red or crimson; the colour is not permanent, with double certainly.

KIDNEY BEANS INTRUDER (*W. H. M.*).—The "insects," as you term them, which are attacking your Kidney Beans are snake millipedes, of which there are several species, the one your crops are infested with being, we think, *Julus terrestris*. You cannot destroy them in the Beans without destroying the crop; this, however, if the specimens sent are a fair sample, is already beyond the power of the present season. You may, however, try to get rid of them by carrying any further loss, and we should like for you to apply paraffin to the Beans. If you can dilute it to a proper strength to destroy the millipedes without injuring the Beans you will have made a valuable discovery. Apply a little paraffin to its pure state; use it also in different degrees of dilution, and observe the result. Give time day into the ground during the winter is a good preventive of the pest.

NEOPTERIS NIDUS (*J. C.*).—The young fronds developing imperfectly suggests their having been injured in the unfolded state, probably by elms or woodlice, which may be caught by examining the plant with the aid of a lantern after dark. "Ragged" fronds, however, are not unfrequently a result of the winter frosts, and the temperature also remaining. We do not employ a higher winter temperature than 55° to 65° for our plants, it being important that they have a good rest during the winter for the development of strong fronds in the spring. We should manure around the plant with oceanic refuse, and keep well supplied with water, sprinkling lightly or over-watering three times a day, keeping perfectly clear from insects and predatory vermin.

PELARGONIUM UNHEALTHY (*Amateur*).—The leaf sent is quite yellow, due, we think, to a deficiency of water at the roots. After weak liquid manure twice a week, maintaining more moisture in the house, yet ventilating freely and shading from bright sun. There is no trace of insects, and only slight indications of root-disease at the rate of 1 oz. to a gallon of water would be a suitable liquid manure.

CUCUMBER SCARRED (*G. A.*).—It is a very common case of gagrene, and arises in every instance that we have observed it from too rich and moist soil, being most prevalent in dull cold weather, the supply of sap being excessive. The maintenance of a higher temperature by day and a slightly drier atmosphere at night, and the use of a hot bed, will be of great benefit in very vigorous plants, and these require more light and heat for the elaboration of the sap than weaker plants. We use pure loam only for growing Cucumbers, the top 3 inches taken with its turf and laid up for about six months, it being light in texture rather than heavy. We find it easy to get a supply of water, and we do not employ a high temperature of manure as may be required, which we think better than mixing manure with the soil before planting.

BOILER AND PIPING (*I. X. L.*).—A down and return 4-inch pipe along the front of the house and one end, or 65 feet of 4-inch piping, will be sufficient to maintain the house at a greenhouse temperature in the severest weather. Only a small boiler would be required. We should have one that would not require very frequent attention; a 23-inch saddle would answer. Consult our advertising columns. A letter to the advertisers, stating what you require, would bring you particulars both as regards size and price.

VINE SHOOTS FOAKED (*C. S.*).—It is most common when the roots are very active—a sign of vigour, and is not unfrequent when the wood was not well ripened. Encourage but one of such shoots, cutting the other away at the base, and stop the one that is left at a joint, and so layer your shoot, keeping the laterals stopped to one joint, the shoots being kept so thin as to expose the foliage fully to light and air. Upon this depends the development of the eyes for future bearing, and the thorough ripening of the wood.

LARGE-FLOWERED WALLFLOWER (*Idem*).—A Wallflower of a "beautiful dark colour, very broad fleshy petals, fine fragrance, and a habit of flowering freely, especially as it is" result of many years' selection.

GRUBS IN KITCHEN GARDEN (*W. G.*).—The garden having been previously old meadow land may be infested with the larvae of the Tipula or Daddy-long-legs, also wireworm. We should apply nitrate of soda at the rate of 1 lb. per acre, or 1 lb. per square rod (301 square yards). Soot would be capital application; one peck per square rod is a sufficient application. In the spring of next year we should also apply lime at the rate of eighty to a hundred bushels per acre.

GREENHOUSE PLANTS FOR AFFORDING COT FLOWERS (*J. D.*).—*Abutilon* *Boule de Neige*, *Aloysia chloriflora* for sprays, *Azalea indica* vars., *Boronia megastigma*, *Donnaxias* in variety, *Tea Carnations* in variety, *Crotona variegatum* var., *Draecophyllum graveolens* var., *Erica* var., *Fuchsia* var., *Libonia floribunda*, *Myrtle* for sprays, *Nouelia gratissima*, *Camellia* vars., *Pimelea* vars., *Plumbago zeylanica*, *Primula sinensis* double vars., *Rhododendron jasminiflorum*, *Rhynchospermum jasminoides*, double *Pelargoniums*, zonal *Pelargoniums*, *Pelargonium* in variety, *Salvia* in variety, *Schizostylis umbellata* in variety for mixing, also *Valletta purpurea*, *Cineraria*, *Mignonette*, *Apopogon distachyon* (an aquatic), *Diomsa capitata*. The blooms of *Epiphylium truncatum* vars. are very useful, *Lilium laetifolium* vars., with *Schizostylis scoculosa*, and *Triton* vars. The *Schizostylis* is invaluable for the same purpose.

CLETHRA (*HOTELIA*) JAPONICA BLIND (*Idem*).—It is usually attributed to a sudden check, as that from heat to cold, or from moisture to drought; but we find an equal percentage of "blind" plants from seeds sown at different

time, the seed being from the same packet. In our opinion it is constitutive, and arises from close breeding or a bad selection of plants for seeding. There is no remedy.

MARKET GARDENING (M. G.).—We should not advise you to attempt learning market gardening from books, especially as you have had little experience. The only thing likely to be of service is to enter the establishment of a good grower of market produce. Without practical knowledge book learning is not of much value. Hibberd's "Profitable Gardening" may suit you.

PLANTING STRAWBERRIES—SORTS FOR LIGHT SOIL (West Coast).—Plants will not be procurable in the nurseries until July or early August, and not till then can you purchase runners established in small pots, such as are usually potted at that time for forcing. These are layered runners, and are much better than plants procurable at a cheaper rate per hundred later on; in fact, if a crop be wanted the year following their planting the plants should be planted not later than early August. The ground should be well and deeply, and enriched, adding manure liberally. Plant in rows 2 feet apart, and 18 to 24 inches from plant to plant in the rows, *La Grosse Sucrée*, *Keens' Seeding*, *President*, and *Lucas*. Sir Harry in some light soils is superior to *Keens' Seeding*.

CONOVER'S COLossal ASPARAGUS (Idem).—It is superior to the ordinary kinds, being larger, and attaining a size fit to eat sooner after planting.

FEACH TREES GUMMED (A.).—The shoots sent exhibit symptoms of gum from the wood being very weak but longitudinal. We should attribute it to a badly drained border, the soil being very wet and the soil unfavourable. We also think the atmosphere of the house is kept too close and moist, as some of the leaves are scorched. Give air earlier, and see to the roots at the proper time. Lifting the trees is the only remedy we have found against gum, according to the drainage. Some trees which gummed severely have recovered since we adopted that practice.

PLANTS IN LONDON (Platanus).—It is the Oriental Plane, *Platanus orientalis acrifolia*.

NAMES OF PLANTS (E. T.).—*Ceanothus thyriflorus*. We cannot name the Parsy, but it is a very fine one. (*J. P.*)—Your specimen was too much crushed for identification. We cannot name varieties of *Borista* flowers. (*F. N.*)—*Alphium* 1; *Hyoscyamus* 2; *Silphium* 3; *Scilla* 4; *Boconia Jeddensis*. (*Student, Hadlow*)—1, *Chenopodium Bonus-Henriens*; 2, *Veronica agrestis*; 3, *Linaris Cymbalaria*; 4, *Veronica arvensis*; 5, *Sherardia arvensis*. (*Almer*)—*Piptanthus upeolalis*.

POULTRY, BEE, AND PIGEON CHRONICLE.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.

CENTENARY MEETING AT BATH.

AFTER a hundred years this Association returns to keep its centenary birthday in the city from whence it first arose, and on the Wells road, about three-quarters of a mile from the Great Western Railway station, we find the wooden and canvas erections with their varied assortment of live stock and goods. The violent hurricane at the end of last week was very severe at Bath, and as things of great fears were entertained for the tents and shedding, but only three erections fell, and the rest barely stood the ordeal. At this meeting there is always something interesting to see, some new invention—a turnip-cutter, a cucumber-slicer, or a cherry-stoner, and these little "fads and fancies" were all at work at Bath, for long rows of counters covered with such endless articles in full view showed that the trade was as brisk as ever. Concerning our own peculiar department there were wire hurdles and netting, poultry troughs and all such appliances; condiments, too, and food of many and divers sorts. At Bristol, Taunton, Hereford, Plymouth, and Croydon we have seen very much the same lot of exhibits, and we even fancied we recognised the same canvas walls and varied-coloured bunting as in past years. Many faces we recognised once more among the departments peculiar to their own loves. In the poultry tent we found many of the same exhibitors, and probably some of the same birds. They made 339 pens on this occasion, and the Pigeons eighty-eight—no great display for the sixty-six classes and the seventeen silver trophies! But this Society prefers "in smooth self-chosen ways to guide its wandering feet," and while the schedule annually remains the same, and the system of insisting that the birds be in the show ground on the Saturday before, while again the entries close so very long before the Exhibition is held, we do not expect ever to see a much larger show. We are sorry, and would urge all to try once more to have these things altered; but it must be taken in hand at an early date, as the arrangements are generally made and the schedules drawn up soon after Christmas. A stronghold of *Spanish fowls*, so we expected to find a very good display. We have done so in past seasons, and the two classes which opened the poultry catalogue were very creditable, but we have seen better. The cup went to a very good cock, large in face and generally good; while Miss E. Browne's hens were well shown and in good feather. *Dorkings* came well to the front. Mr. Cresswell won both the cups, the one with a capital Silver-Gray cock clear in colour but a little loose in comb; the other cup he won with a fine pair of White hens, one of them certainly the best we ever saw. Mr. Boissier's were very nest in comb but rather small. In Coloured cocks Mr. Radcliffe's bird was in fine feather, but for shape we preferred Mr. Burnell's. The *Cochins* were only fair. The *Buffs* we thought well judged; they were only a fair

lot. Partridge cocks, too, we did not think a great deal of, and in hens there were only two pens, one of which won the cup. Whites were better, but the cocks struck us as being small. We preferred Mr. Tomlinson's, for the first-prize bird was rather narrow or else very white. In hens we did not much like the winners. One of them was shapely, but they had ugly combs and heads. We liked the second-prize birds very much, one of them especially was very good indeed. Mrs. Holmes, too, had one good bird, and so had Mr. Tomlinson. The *Brahmas* were much out of feather. Mr. Smith's bird looked well and was well in first. The Dark cup hens were also well pencilled and large. In Light *Brahmas* one of the first hens was excellent, and so was the same owner's highly commended cock. Mr. Breeze had a fair cockerel which as a chicken deserved, we thought, some mention. There was also a pair of pullets shown, but they were but small and seemed too matured ever to make birds of much use. The second Light *Brahma* cock was in good feather, but too large in tail for our taste. *Polands* were meagre in entries. The first cock was a Gold, rather small in crest, but in peculiarly good feather and with very long hackles. Hens only made two pens. The cup went to one pair, a most splendid pair of *Silvers*; they were large in crest and in good feather, being so good in neck. In *Langshires* the first prize bird, though good in size, crest, and feet, possessed the most awkward comb we have seen for a long time. The second prize went to a specimen possessing a better comb, but otherwise of no great merit. Mr. Thomas's bird had the best comb in the class. *Hondan* hens looked rather eedy altogether and small compared with the portly matrons to the sight of which the late Mr. Dring accustomed us. The first-prize pair were moderately dark with good globular crests and were well matched. The second, of the same type, were smaller. In *Crève* cocks Mr. Feast secured the cup with a well-shown specimen, his comb of the right kind. Second prize went to a moderate bird good in colour. *Crève* hens were five pairs in number. The first-prize pair (*Feast*) good, but with too much white in their crests for our fancy; the second pair nest and good in colour, but rather small.

(To be continued next week.)

WORDS INTRODUCTORY.

"WILL it live its hundred years?" has been often the question put disparagingly in regard to some book. "Will he live his hundred years?" has been often said of some writer. And indeed a century is a terrible trial to fame. Maury-praised, known by all, famous a hundred years ago, now utterly unknown; only the truly great live on their century and over. Well, our excellent Bath and West of England has lived its trial one hundred years, and is stronger in capital and better and wider known than ever. It was a happy thought that the centenary of what takes its name from "The Queen of the West" should be held in Bath. The weather had been terrible to us in the near neighbourhood, and many a time have I said, "Oh, poor Bath people! they will have a double disappointment. No Prince of Wales, and wet, and misery, and loss." All last week rain in torrents, and storms reaching to hurricanes; the ground of the showyard soaked, engines and machines immovable in the mud. But Saturday gloriously dry, Sunday gloriously hot, sucking up moisture rapidly—too rapidly, said the croakers. Old fogies said, "The glass rose too fast." But Monday came and better weather still—heat, blessed bone-searching heat, so welcome after that dear deluding May, the pretty month spoiled by east wind, as I have seen a pretty face spoiled by a bad tan. But only Monday weather, with heat and yet a breeze going—just the thing, and no dust possible on the ground. Cheer up, Bath; your citizens will have a good sad not dull time. The Queen of the West has received her crown of sunshine. Taunton, Salisbury, and the rest of you, hide your diminished heads; you have no view like that from Breechin Cliff, and no show has ever been so grand as to-day's.

In calm critical mood I reach the Pigeons—not brain-distracted like a friend with me, who had his thoughts in the dog show and with his dog wrongly entered. N.B.—Next year that show will, I hope, be inside the grounds, a part of the whole. Dogs and horses should go together. One walk along the very short row of Pigeons, and first, several of them empty, the thought of the critic's words on first seeing Edmund Keas, "Good enough looking, but pity there's so little of you." Only eighty-eight pens! This is a sad falling-off from what I remember eight, ten, and fifteen years ago. Why, Bath and West of England used to be the best summer Show for Pigeons, as it is the pleasantest for everything.

Carriers.—These were a singularly strong class, eighteen entries. Among the cocks the first-prize was a Dun (Ardeley), good in colour, in jaw, but upper beak and eye wattle not so good. Second (Fulton) a Black, and which I preferred to the first. Head very good, eye somewhat dismounted, but head carried up grandly; neck thin, shoulders broad—indeed, a fine, well-proportioned, true fancy English Carrier. No. 349 (highly commended) very much of the old Horseman type. The first hen, first-and-cup she was, good Black, a long beak, narrow

Sales, Crowle. *Cage Birds*: Mr. R. Barber, Grimsby. *Rabbits and Cats*: Mr. J. Allison, Sheffield.

MANAGEMENT OF A SITTING HEN.

BURN out every nest-box, new or old, before and after using. The charred surface will not favour the lodgment of vermin. Fill each nest-bottom with a freshly-cut sod slightly hollowed towards the centre, covering with fine straw. Sprinkle nest and hen with carbolic powder. Do not use too much sulphur; in fact if carbolic powder is obtainable do not use it at all. Let your hen get accustomed to the nest before trusting her with the eggs; then give the eggs to her, quietly inserting them under her rather than giving her to the eggs. "Make haste slowly." Do not give her more than she can cover and care for well. Mark the eggs with ink, giving kind, if necessary, and date of sitting, preserving a duplicate record in a book kept for the purpose. Examine the nest daily. If an egg is broken, or even cracked, remove it. If the remaining eggs have any trace of the disserter, clean them from it by washing them carefully in tepid water. The contents of an egg are alive or dead. If alive they must have air. If the pores or air-ducts of the shell are closed the contents die of suffocation. The grave is made and hermetically sealed. It is our plan to moisten the eggs and nests three times during the last ten days of incubation when the nest is in a dry warm situation, and the hen not permitted the freedom of out of doors. We have found it done most easily and effectually by a fine rose sprinkler, using tepid water. If a chick must be helped from the shell give it aid in the form of warmth, and warmth only. Insert the pipped or un-pipped egg, if you are assured that it contains life, in warm water, being careful to keep the opening of the pipped shell above the surface. It is wonderful how quickly new life will be infused, and the little bird gain strength to help itself. If in the course of hatching it is necessary to examine the nest and its contents, remove the hen, then the contents. Allow the hen to return to the nest, then give chicks and eggs to her; she will carefully tuck them away where they shall not be injured. Mark the chicks when taken from the nest in a web of the foot either with one of Scribner's steel punches, or with a darning needle filled with coarse twisted silk, leaving the silk in the hole until it has healed. Make record of the mark and its purpose. Do not feed the chicks for the first twenty-four hours after hatching, then give hard-boiled egg or bread and milk. The best brood of chicks we ever saw were never fed with mixed or "artificial" feed of any kind, but simply broken grains, coarse corn-meal, oat-meal, and bird seeds were given. It was an experiment and a success. Examine each chick's head for the long time that are so often found there. Kerosene oil is an excellent remedy, simply applying it with the finger. The eyes are exposed to view, and they generally yield to the first application. Give young chicks every care and attention. Do not let them be stunted by exposure to cold, dampness, or by lack of food. Feed often, but not more at a time than will be eaten up clean. Remember that chickens are early asleep and early awake, and prepare food for them to find as soon as they are out in the morning, at daylight, instead of allowing them to chirp around half starved for two or three hours. If you can manage to give them a late evening feed they will thrive under it. Anyone caring to make the experiment will be astonished at the difference in the growth of chicks fed early, often, and late, and that regularly, and those fed, as they too frequently are, without any system—"when I happen to think of it."

If the hens trouble you with egg-eating file off the end of the bill. An eighth of an inch will make it too tender to permit the breaking of an egg-shell, and still not interfere with the daily feeding.—(*American Fanciers' Journal*.)

THE HIMALAYAN RABBIT.

The Himalayan Rabbit is a native of China, and was at one time known as the Chinese Rabbit. Gradually, however (it is difficult to say why, unless it is due to the Chinese ware), the name has died out, and it is now but rarely met with. In some parts of the country the breed boasts of many names, but generally speaking Himalayan is the accepted one, notwithstanding a wilful attempt at such misnomers as Russian, Polish, and even Patagonian.

The points of the Himalayan are exceedingly peculiar and simple, and there is no variety that breeds so true to colour. The body is of a snow-white tint, the fur being very short. It is undoubtedly the shortest of any variety, and it is by no means a fit imitation of ermine. The eye is bold and full, and of a light pink colour. The nose, ears, tail, and tips of the feet are of a dark colour. We say "dark," because it is difficult to name any one colour in particular. Were we to say that they are black we should most certainly be presuming that exceptions proved the rule, for but few specimens are to be met with of a pure jet black. Of course, scarcity always enhances value, so that a really good black specimen is good indeed. Dark brown

is generally considered good, the darker the better, and the lighter the worse. The reason for this is not only that it is a law and settled among the fancy, but also because the contrast between the light and dark is so much more striking. The junction should be sudden without a separating line of light brown. The extremities should be all of one shade, and not some of them black and others drab. Often are appearances deceitful in this variety. Thus, when an animal is seen in a reclining posture the richness of the colour of the points and the purity of the white are commented on, and the animal thought Al. But rouse the refter, and how bitter is the disappointment. How often do light brown or drab feet meet the eye, making the animal fit only for transportation to a butcher or breeder? It is important that all the points should be of one colour, and all the feet should be shaded alike, not the two foremost dark and the two hindmost light. It is not often that the feet alongside vary much, although sometimes an animal may be rendered almost worthless by one pale foot. The head markings will generally come right if the strain is good, but it is not so with the feet. These oftentimes give much trouble and even annoyance, as with the utmost care and attention they will often persist in keeping a light grey colour, while the other points are of the rich brown so much coveted and so hardly obtained. The nose-marking should be regular and not streaky, the colour meeting as suddenly as possible. The ears are short and erect, sometimes standing rather more forward than is the case with the common Hutch Rabbit. This, far from being a deformity, increases somewhat the beauty of the appearance. The ears must never approach to lop. In purchasing a specimen of this breed never be persuaded that a drooping ear is the result of an accident, or oversight, or something of that sort. Rather depend upon it that it is the effect of a cross, which, however dormant it may now appear, will undoubtedly re-appear in future generations. The legs should be long and strong. These organs are not generally capable of carrying much flesh, although the Himalayan generally is a flesh-producing breed. The tail looks much prettier when very dark. Altogether it will be seen that the snow-white body, the pink eye, and the black points combined, produce an animal which is second to none for beauty in the numerous category of Rabbit breeds and crosses. The general tendency of the body is stumpy and very compact. They will put on flesh with amazing rapidity, and will keep in condition with as little, if not less, trouble and expense as any breed of Rabbit exists.

The Himalayan is very prolific. About six will be average number in each litter, and the doe is very quick in coming into season again, so that the number of young depends almost entirely upon the discretion of the breeder. Every doe will rear as many as twenty healthy young ones every year, and anyone who is not satisfied with such a number must be extravagant in his expectations. The young are strong and hardy. When born they are white, and remain that colour till two or three months old, from which time to about eight months the points gradually darken. They are usually perfect at about eight or nine months, after which time it is by no means unusual for them to fade a little.

In disposition the doe Himalayan is docile and gentle, and easily taught to recognise its keeper. The buck, too, is generally pretty quiet, although a rough customer is sometimes met with. With care and discretion, and an avoidance of teasing, there will, however, be seldom any cause for complaint in this direction.

Altogether the Himalayan is a cleanly, handsome, and docile Rabbit, and one that can easily be made to pay its way. Its flesh, although it seems almost a libel to say anything about the food properties of so pretty an animal, is very white and tender, and competent judges assert it has the nicest flavour of any breed extant.—GETA.

TRANSFERRING BEES TO BAR-FRAMED HIVES.

A CORRESPONDENT writes as follows, and we give prominence to his inquiry, as well as to the advice given, because doubtless some others of our apiarian friends are desirous like himself of transferring their bees to bar-framed hives. He says, "I have three or four stocks in plain boxes without frames, and I wish to transfer them this season into ten-frame hives, Abbott's standard. I have taken first swarms from some, and hope to have one from each before I have your reply. I want to get as much value from the bees as I can this season, and what I wish to know is whether it would be better for me to drive them into the new frame hives twenty-one days after the first swarm in each case, or leave them in the boxes until the season is over, and give them up to fill now."

The above letter having been forwarded to me, I reply that if I were in our friend's circumstances I would make the transfer at once—that is, at the end of three weeks from the issue of the first swarm; but I would drive first into an empty hive and see whether I could not utilise the combs of the old hive, and see of them as were straight and in good condition. A little ingenuity

would soon put them into shape by using thin strips of lath tacked across the bars, which could easily be removed at any time after the bees had secured the combs and made all fast. I should be in no hurry to do this, waiting even till the following spring, when the usual examination of hives takes place. Autumn transfers I object to, as much waste of honey and bee life ordinarily takes place at a time when every life is precious and breeding is drawing near its close for the season. Now, in spring is the time for any such manipulation as is in question. When the combs have been carefully arranged in the bar-framed hive it should be gently placed on its permanent stand, and the bees can be dashed out on the top of the bars, which should be perfectly open and uncovered to receive them. They will at once descend, and the cover can be put on afterwards without the loss of a single bee.

If the bees are transferred now into the bar-framed hives thus provided with comb but little honey must be expected from them in supers this year; but neither could much be expected from the untouched hive after it had given a prime swarm, unless one could be sure that it would not send forth a cast or second swarm. On the whole I think the gain will be about equal for whichever plan is adopted. Next year, however, the advantage of a spring transfer would be greatly in excess in comparison with what would be gained if the transfer were to be made in autumn. The stock would commence the year under much-improved auspices.—B. & W.

LOSS OF STOCKS.

"CAN any of your readers account for the death of two strong stocks of bees? They were fed in March and had honey in their combs in April, but now the bees are lying dead all round the hives both inside and out. The combs are empty of honey, though the hives were full of workers, drones, young bees, and brood combs. Some of the workers found dead were covered with pollen.—C. D."

The stocks thus described were lost by want of food. Many other bee-keepers have lost stocks this spring from the same cause. I may here say that has been said before, that one cannot too strongly insist on attention being paid to the feeding of bees in cold spring months. Not one bee-keeper in fifty has an adequate idea of the quantity of food wanted daily by strong hives. In winter and early spring bees do not consume much food, but as they increase in numbers and activity more food is required. When hives become full of bees and brood and drones are flying about their daily consumption is enormous. In a large strong hive nearly ready for swarming there are probably 40,000 working bees, and as many cells full of brood. Here is a large city full of inhabitants all wanting food. Such hives we know rapidly decrease in weight during unfavourable weather, when bees cannot go abroad for food or find it when they go. The present season has been remarkable for cold easterly winds, which are hurtful to vegetation and which hinder the flow of honey into the flowers. With such winds bees may find pollen, but not much if any honey. Young bees are tempted by their instincts of industry, go abroad to work and find nothing but pollen. In cold weather many of these may be found round hives, having been chilled and starved to death. Sometimes they alight on the flightboards and are unable to creep into their hives. Our correspondents' bees that were covered with pollen had lately been in the fields doing their best to gather food for their communities, but were unable to find it. When there is no brood in hives in times of famine the bees go off as hunger swarms, never to return. The very name of hunger swarms has a painful significance; but when brood exists in hives the bees never abandon them, and at last when the pinch and pressure of hunger can be no longer endured the bees let their queens have the last sip of honey, then many of them press their bodies into uncapped cells and thus bury themselves before death. We all learn by experience, and often grow wiser by misfortune. Many bee-keepers who have lost hives by their own inattention have resolved that the like would never happen again, and having carried their resolution out they have become wise and successful apiarists. If some of our readers would place their hives on some kind of weighing machine or suspend them on steelyards, and let them remain thus placed or suspended for a month, they would be interested, and learn much by noticing the gains and losses every night and morning.—A. PETTIBREW.

OUR LETTER BOX.

REARING CHICKENS (Notice).—It is a generally received opinion that June is a bad time for hatching chickens. A very old saying is—

"Chicks that are hatched when there's making of hay Will never grow up, but will waste away."

We cannot pretend to say whether they are subject to hay fever, nor can we pretend to say whether hay has anything whatever to do with the chickens; but it is more than likely why "the hay is about" the chickens go to the wall and die the close attention of the reader. We hatch largely all the year round. We think we have more trouble with June chickens than with any others. Where they have the opportunity of running in high grass

they often suffer from cramp, but as soon as the grass is cut then the trouble ceases. Many chickens are exceptionally strong, and give less trouble than any others. July chickens the same. If we had our choice we should not choose to hatch our chickens in June, but if we had no choice we would not be deterred by sayings nor croakings.

BANBURY POULTRY SHOW.—We are informed that Mr. W. Wykes was placed first in Class 40, Turkey cocks, and not Dr. E. V. Snell as stated in the report of the Show.

MANAGEMENT OF BEES (E. M. M.).—Your questions require fuller answers than we can give them now, but all the information you seek will be given in the Journal during the season. Placing glasses on hives for honeycomb does not always prevent swarming; but as one of your hives has returned and commenced filling a super, you may expect that it will fill the super and store-nip honey enough to support the bees in the hive during the winter. Indeed, hives that fill supers are generally too full of honey for keeping. If a swarm issue again from the hive cast it back on the flightboard, so that the process of filling the glass may not be stopped. In the autumn you may take the honey from old stocks and unite their bees to the swarms of the current season. About the end of August is the best time to take honey from old hives and melt the wax. Combs two years old, or have been used by bees for two seasons, are quite old enough.

GETTING THE TURN.—Your hive probably swarms as well as any. The best time for the "turn-out" is three weeks after the first swarm. See what we have said on this subject elsewhere. Perhaps you will have a cast or second swarm before, but this will not matter if your stock is a strong one, but you can generally prevent this by placing your first swarm in its new home in the previous week. If you have a second swarm, you should not let half an inch apart. Bees will go up just as well without turning the hive upside down, provided there is a clear uninterrupted passage between every comb.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 5' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Fath.	
	Barom. at Sea Level.	Hygrometer.		Direction of Wind.	Shade Temperature.		Radiation Temperature.			
1877.		Dry.	Wet.		Max.	Min.	in sun.	in shade.		
May										
June										
Jan. 30	30.800	55	58	S.E.	52.0	55.0	60.0	59.0	0.015	
Feb. 31	29.822	52.8	55.5	S.E.	52.0	55.0	60.0	59.0	0.095	
Mar. 31	29.818	54.8	57.8	S.W.	53.0	56.0	62.7	62.2	0.440	
Apr. 30	29.872	52.8	52.1	S.W.	52.4	59.4	61.3	71.5	47.7	
May 31	29.837	50.0	52.5	S.E.	52.4	51.0	48.3	52.5	98.9	
June 1	29.877	62.1	57.2	S.	55.2	52.7	52.4	48.6	—	
June 2	29.930	60.7	53.3	W.	58.0	58.5	53.7	12.0	46.6	
Means	29.708	53.1	54.2		55.7	59.2	49.3	107.2	44.2	0.154

REMARKS.

- 30th.—Rather dull; frequent short showers till towards the evening, which was fine and pleasant.
 - 31st.—Dull morning and forenoon; showery afternoon, but fine evening.
 - June 1st.—High wind in night and early morning; shower about 3 A.M.; wind westerly, but not cold.
 - 2nd.—Wind in night and early morning; fine afternoon and evening.
 - 3rd.—A very fine day, great rise in the temperature, which reached 81° in the shade.
 - 4th.—Rather hazy early, but followed by a very fine day, even more warm than the previous day; much cooler in the evening; wind high at night.
 - 5th.—Another bright sunny day and very warm.
- A very sudden and considerable rise of temperature on the morning of June 3rd. At 9 P.M. on 2nd it was 56°, before sunrise it fell to 45° (and on the grass to 30°); by 9 A.M. on 3rd it was 70°, and reached 81° at 4 P.M. There was a 22° difference between the maximum of the 2nd and 3rd.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 6.

BUSINESS has been more active during the past week, and all classes of goods have been readily cleared. The last few bright days have made a marked improvement in the potatoe crop, the supply and keeping price of the extra quality. Large quantities of new Potatoes have arrived from the Channel Islands, clearances being effected at lower rates.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	10	0	0	Oranges.....	1	10	0	0
Pears.....	1	0	0	0	Peaches.....	1	0	0	0
Apricots.....	1	0	0	0	Pears, kitchen.....	1	0	0	0
Plums.....	1	0	0	0	Do. dessert.....	1	0	0	0
Filberts.....	1	0	0	0	Pine Apples.....	1	0	0	0
Cobs.....	1	0	0	0	Strawberries.....	1	0	0	0
Grapes.....	1	0	0	0	Wild Strawberries.....	1	0	0	0
Lemons.....	1	0	0	0	Walnuts.....	1	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	1	0	0	0	Mushrooms.....	1	0	0	0
Asparagus.....	1	0	0	0	Mustard & Cress.....	1	0	0	0
Beans, Kidney.....	1	0	0	0	Onions.....	1	0	0	0
Beet, Red.....	1	0	0	0	Peas, garden.....	1	0	0	0
Broccoli.....	1	0	0	0	Peas, kitchen.....	1	0	0	0
Brussels Sprouts.....	1	0	0	0	Do. dessert.....	1	0	0	0
Cabbages.....	1	0	0	0	Pears.....	1	0	0	0
Carrots.....	1	0	0	0	Peas, garden.....	1	0	0	0
Cauliflower.....	1	0	0	0	Potatoes.....	1	0	0	0
Celery.....	1	0	0	0	Do. Kidney.....	1	0	0	0
Coleworts.....	1	0	0	0	Do. New.....	1	0	0	0
Cucumbers.....	1	0	0	0	Do. Round.....	1	0	0	0
Endives.....	1	0	0	0	Do. Ribwort.....	1	0	0	0
Fennel.....	1	0	0	0	Do. Salad.....	1	0	0	0
Garlic.....	1	0	0	0	Do. Sorrel.....	1	0	0	0
Herbs.....	1	0	0	0	Do. Spinal.....	1	0	0	0
Lettuce.....	1	0	0	0	Do. Swiss.....	1	0	0	0
Leeks.....	1	0	0	0	Do. Turnip.....	1	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 14—20, 1877.	Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
14	Th	Royal Society at 8.30 P.M.	72.6	47.9	60.3	3 44	8 16	6 34	11 3	3	0 1	165
15	F	York Show closes.	72.8	48.3	59.9	3 44	8 16	6 7	11 22	4	before	166
16	S		72.6	48.3	58.8	3 44	8 17	9 35	11 38	5	0 25	167
17	SUN	8 SUNDAY AFTER TRINITY.	72.9	47.3	59.6	3 44	8 17	11 2	11 51	6	0 38	168
18	M	Sale of Orchids at West Leigh, Leicester.	72.3	50.4	61.3	3 44	8 18	0 25	mora.	7	0 51	169
19	Tr	Royal Horticultural Society—Great Summer Show.	70.8	48.6	59.7	3 44	8 18	1 47	0 3	8	1 4	170
20	W	Disa and Blechneth Show.	73.3	50.5	62.4	3 44	8 18	3 9	0 16	9	1 17	171

From observations taken near London during forty-three years, the average day temperature of the week is 73.3°; and its night temperature 48.7°.

MUSHROOM CULTURE FOR THE MILLION.



WHY are Mushrooms not more generally cultivated? Not because the process is at all difficult, for it is very simple, but probably because of its supposed difficulty. "Mushrooms are very delicious," says my amateur friend; "but then you know they are grown in a structure specially adapted to the purpose, fitted with slate shelves, heated with hot-water piping, and in point of fact are just a luxury for the rich, excepting when one can gather them in the fields in autumn." Now this, as all gardeners know, is an entire mistake; and I am sure I shall be doing good service and obtain the thanks of many ladies by showing how a supply of this breakfast-table delicacy is within reach of everyone having command of a little stable manure in spring, summer, and autumn, if not in winter.

I have to build a Mushroom house whenever time can be spared, but meanwhile a supply is maintained by making beds in all sorts of nooks and corners. Two beds are now in full bearing in what will one day be a conservatory stoker. Soil has just been placed upon a succession bed made in a shed used for storing coke; other beds will follow in an open shed that is used as a soil shed in winter; and if it is found necessary other beds will be made in the open garden and kept covered with straw. Some years ago I used to grow excellent Mushrooms in a cellar beneath an old ruinous garden cottage which unfortunately was infested with rats, who after a time took a fancy to my Mushroom beds, burrowing in them like so many rabbits, so that I had to acknowledge myself beaten for once; for it was in vain that we organised grand rat hunts and made fresh beds, the defunct rats were promptly succeeded by a fresh batch which made straight for the Mushroom beds with provoking celerity. I allude to this to show that some caution is called for when beds are made in old buildings.

Proceeding now to consider the few and simple details of culture it may be stated, as a general rule, that the bed should be a yard wide and 2 feet high in the colder months of the year, in order to retain heat in it sufficiently long to bring the crop to perfection; half that height being ample in summer and early autumn. The length of the bed may range from a yard upwards. If there is any difficulty in obtaining enough manure, some loam or ordinary garden soil may be mixed with it in the proportion of one-fourth of soil to three-fourths of manure. I have no objection to some straw among the manure, only in that case special care is given to make the bed quite firm by a little extra ramming and stamping. In making the bed the dung is thrown-in in layers 9 inches thick, well pressed together till the required height is reached. The reason for making the bed so firm is that heat may be generated quickly and that may not readily escape, which would happen in a loose manure heap. In most instances the spawn may be inserted when the bed is made, but if the manure is very wet it may become so hot as to injure

the spawn, and therefore it is well to exercise a little caution and to wait a week, or longer if there is a suspicion of riek. The spawning is done by breaking up the spawn cakes into pieces the size of a walnut, inserting them in holes made with a dibble 2 or 3 inches deep and the same distance apart in the surface of the bed, covering the surface immediately afterwards with a couple of inches of rich loam, pressing it gently down with the back of a spade. Then if there be a steady heat in the bed, very warm but not hot and burning, a full crop of Mushrooms may be looked for in from five to six weeks from the time of spawning, and a daily supply may be gathered for about a month.

If the soil becomes dry a moderate soaking of tepid water must be given, the condition of the soil always being a safe guide as to the necessity for watering or otherwise.

This slight sketch of a rough but very satisfactory method of growing Mushrooms will, I hope, prompt the many readers to turn to account such contrivances as may be available; for even if they have no shed or cellar they may yet have an old packing case or two, which would not only answer the purpose equally well, but would present the novel aspect of a portable Mushroom bed.—EDWARD LUCKHURST.

IXIAS.

THIS beautiful family of bulbous plants is now commencing to bloom and to dazzle the eye with gorgeous and various colours. I know of no genus of bulbs that has such a variety of colours; it contains all the most telling—viz., yellow, red, scarlet, rose, white, blue, and even green; nearly all the intermediate shades both brilliant and soft are also strongly represented.

The best time for seeing a collection of Ixias in bloom is a warm sunny day, when they are well expanded; the sight then, looking on a bed of this lovely Cape bulb, is, as I have already stated, simply dazzling, and when once seen never to be forgotten. I have often seen lovers of flowers when suddenly catching sight of a bed struck with the greatest admiration. It is pleasing to notice the great strides that have been made during the last few years by hybridising; so much so that in Loudon's "Encyclopedia of Plants" twenty-two species are mentioned, of which only two are now in prominent cultivation; these are crateroides and viridiflora. This, I think, shows fairly well that the efforts of the hybridiser have been crowned with success. The kinds of late introduction are of much brighter colour, broader petal, larger flower, and of a stronger constitution—in a word, far surpassing the older varieties.

I will now detail their culture, which is extremely simple, under four important headings—namely, situation, soil and manuring, planting, and protection.

SITUATION.—This is a point on which all future attainments greatly depend. For the Ixia family a sunny, warm, and naturally sheltered position is necessary; the stronger the sun strikes on them and the calmer the

weather the better they expand, and consequently become more showy.

SOIL AND MANURING.—The soil best suited to their requirements is a compost of light sandy loam, well-decayed manure, and wood ashes thoroughly incorporated. At the appearance of their flower spikes a casual watering with a weak solution of guano or Standen's manure will prove beneficial.

PLANTING.—They should be planted 4 inches deep on raised beds about 3 feet across, or in clumps on a south border, in zigzag rows 2 inches apart, any time from the commencement of October to the end of November, choosing a day when the ground is in a good working condition. It is well to take the bulbs up every year when dried off, which will be about August. By leaving them in the ground they commence growing earlier, and are more liable to be injured by the late frosts.

PROTECTION.—This is a portion of their culture which must be very carefully attended to. The beds should be hooped over, so that in the event of severe weather they may be quickly covered with mats or any available material suitable for covering, but by no means should this protection be allowed to remain on longer than is absolutely necessary, or it will cause the plants to blanch, and then it does not require much of frost to injure them. This is but reasonable. I have from time to time heard amateurs say, "Oh, it is no use my trying to grow these beautiful Ixias. I am very sorry. I did all in my power. I covered them with mats almost directly after planting; they came up well. I took off the mats in April, and we had rather a sharp frost from which they suffered severely. They are really too tender for my garden." Now is there anything to wonder at in their being "severely injured" under such treatment as this? The happy medium is what they require—protection when protection is needed, and plenty of air at all other times. In the northern counties it would be advisable to grow them under a frame, but keep this also thoroughly well ventilated, merely guarding against inclement weather. I have often seen them when unprotected stand several degrees of frost uninjured.

CULTURE IN POTS.—I know of no better practice than that recommended by your correspondent "D. Deal," in the Journal for January 13th, 1876, page 26, which I take the liberty of repeating, being guided by the old adage, "Leave well alone."—"After potting them in the autumn place them in a cold frame, and keep them there until the spring, then bring them into the greenhouse for blooming."—H. C. SMITH, JUN., *Caledonia Nursery, Guernsey.*

[Accompanying this communication were spikes of upwards of fifty named varieties of Ixias, which for size and variety of colour we have seldom seen equalled and never surpassed. Many of the spikes contain upwards of twenty flowers, many of which exceed 2 inches in diameter. They expand freely in water and continue fresh for a long time, but they are beautiful even in their unexpanded state, the stripes on the back of the petals being very attractive. It is a splendid collection. —Eds.]

LATE PEAS.

It is curious how almost every person places so much value on early and so little on late vegetables. For instance: Why should not a dish of fresh green Peas be as much relished in the middle of November as they are the first week in June? Speaking personally, late Peas are far more required from me than early Peas; and one dish in November, or even at the end of October, is more valued than six dishes in June or July, and I fancy they would be quite as much appreciated by others if they could have them. Some may think that late Peas will be liable to be cut off by the frost before coming to maturity, but there are just the same chances that they may escape, and as a rule the weather until November is as fine as it is in March and early in April. When the seed is sown properly and in a selected place I never consider it thrown away or the chance of a crop hopeless.

In order to make these notes as practical as possible I will deal with Peas, which if sown from now onwards will come into bearing from September until the end of the season. The weather in June and July is often very dry—it may be so this year. Peas never germinate very quickly or healthily in dry soil. For this reason means must be taken to sow them in a cool moist soil. Sandy soils near the surface are never cool, and heavy loam becomes hard and dry under a continuance of drought, and to escape the evils that invariably attend such a state of matters the seed should be sown in trenches. Select

the part where the row is to be, then dig-out a trench as for Celery, 18 inches wide and about 1 foot deep. Make the bottom level, and then spread decayed manure and leaves all over it to the depth of 6 inches. Dig this in, and in doing so be very particular to mix the manure and the soil well together, and always keep the dung nearer the bottom than the top. After digging-in the manure take a draw-hoe and make a broad ridge 3 inches deep along the centre of the trench. The seed may then be sown and covered over. Previous to the 12th of May I sowed all my Peas on level ground, but then and since I have sown them in trenches, and those put in on that day are looking better so far than any which have come through the ground this season. In very dry weather after the Peas have been sown the trench may be filled-up on both sides with dung as a mulching, and they can be very conveniently watered in the trench; but it is seldom they need this, as they do not readily become dry when treated in this manner.

Three different sowings may be made at equal intervals in June, and the last may be made in the second week in July. Some recommend sowing early varieties for the latest crop. I do not think these are the best. The Pea I prefer before all others for late use is *Ne Plus Ultra*. It is a grand Pea. It grows 5 feet high, produces pods in great abundance, and seldom fails to fill them even in cold autumns, and it is very hardy and not subject to mildew. *Omega*, one of Mr. Laxton's productions, is also of some importance as a late Pea, but it does not grow over 3 feet in height. *Ne Plus Ultra* requires tall stakes, and the rows should not be closer, especially the latest, than 7 feet apart. Late Peas should always have plenty of room between the rows, as it is a great advantage to expose them to abundance of light and air.—PRACTICALIST.

ANOTHER CHAT ABOUT ROSES— DETERIORATION.

I QUITE agree with the writer of a very suggestive "Chat about Roses" on page 375, that the love of the green of flowers is not dying out. Why? The dullest observer, taking a mere constitutional in almost any country enclosure called a garden, would have the question answer itself. It could not fail to be forced on his notice how the Rose is gradually extending the hem of its border, and gratefully, beyond all flowers, repaying a hundredfold the care and love bestowed upon it, even if that individual was not privileged, as I am, to take an occasional peep over my neighbour's vast nursery grounds and to hear him make the astounding statement with justifiable pride, that directly or indirectly he last year supplied gardens with a quarter of a million of Roses. Will the gentle writer forgive me if I disagree *in toto* from the reason he goes on to give, explanatory and deprecatory, of such friendly chats as his (although freely welcomed in our Journal), being so few and far between?

Such unfortunate reticence is solely owing in his opinion to the fear of unsimable retort and anonymous satire. Now, as a constant reader I confess never to have once seen this complaint substantiated. No, I look for the reason from an entirely different source, and find it (as a very integral part of my own imperfect humanity) in the dread of trouble in the effort required to make up one's mind, the *vice par excellence* of the present age with men of culture, even in the case of those who stontly ride their hobbies, as all least successful rosarians must do.

I will now notice another complaint of your correspondent. He says he has often heard remarks made about certain old favourite Roses degenerating, and pertinently asks, "May not this arise from the insertion of bad buds to begin with?" On this point I do not suppose there would be any difference of opinion; but on a kindred subject—*i.e.*, whether Roses do not deteriorate from continual budding, the answer would, from my point of view at least, still be in the affirmative, though from what reasons may not be quite so self-evident. As a matter of fact, H.P.'s Charles Lefebvre, John Hopper (with their marvellous constitutions), *Géant des Batailles*, &c., are not such grand flowers as they were years back, and if not, why not? In the forcible logic of Jack Bunsby to Capt. Cuttle, "The bearings of this observation lays in the application." My application is this:—Assuming *à la* Darwin as a principle that cross fertilisation between the individuals of a species is the standard law of nature, and practically, with very few exceptions, is universal; so it may inferentially be laid down

that no hermaphrodite species could continue to exist beyond a certain time. Now, a series of plants propagated by buds or scions must have a weaker hold on life than a series propagated by seed, inasmuch as the former—*i. e.*, budding or grafting, is the closest possible kind of in-sand-in breeding, and consequently such modes of propagation must be expected in the very nature of things to deteriorate and gradually to wear out. If this be true we ought not to wonder if our most vigorous Roses fail to sustain their pristine character as varieties in the foremost rank of excellence; and although doubtless much may be done in the way of rejuvenation by propagating from cuttings, or as is done with success more or less partial in the case of fruit trees by obtaining buds or scions from root-suckers, nevertheless I have yet to be convinced that Roses or any other non-sexually propagated varieties have elements of permanence for more than an indefinitely restricted period, though it may be impossible with our present knowledge to do more than hazard a guess as to its approximation.—HEREFORDSHIRE INCUMBENT.

FERNS.

For some time past I have been interested in notes made now and again in the Journal upon Ferns and the soil used in their cultivation. In one of the notes past was supposed to be overvalued for food for these charming plants. Such may or may not be the case, but it is satisfactory to know that these plants will accommodate themselves to other soils. During the past few days I have visited several large ferneries in Westmoreland, and witnessed Ferns thriving in such admirable manner that from their appearance the material in which they were growing was to their liking. As the soil mixtures commonly used varied considerably in three different places I thought it might be interesting and useful to some of your readers if they were recorded in your esteemed Journal. In No. 1 fernery nearly all peat with a little garden soil was used. No. 2 used a mixture of one-third peat, one-third loam, and one-third leaf soil. No. 3, loam with a little leaf soil. When these mixtures are required for pot use, silver or other sharp sand is added to them, but not otherwise. *In the foregoing compounds Ferns (nearly all British) were growing in fine form and splendid health; but in my estimation the Ferns growing in nearly all peat with garden soil were cleaner and stronger in growth than those growing in the other two mixtures. With regard to the use of liquid manure among these plants, it is found that it causes them to grow coarser, and, moreover, soon exhausts them. A little stable or cow manure thoroughly decayed, when incorporated with the soil in which they are growing, is beneficial.

One other thing was remarkable in the ten ferneries and gardens visited, that exotics were noticeable by their absence, while British Ferns were grown in thousands with the greatest care; and it must be acknowledged that among our native Ferns there are beauties of form and development which cannot be found in the exotic Ferns commonly in cultivation in this country. In the pilgrimage several new and unnamed varieties were met with; some of them are undoubtedly improvements upon existing varieties, and will in time take high positions as decorative plants.—G. H. S.

HARDY SPRING AND AUTUMN-FLOWERING PLANTS.

SPRING flowers are very beautiful. *Helleborus niger* is the earliest I know; then *Snowdrops*, *Eranthis hymalis*, *Crocuses*, *Hepaticas*, *Sisyrinchium grandiflorum* and *albium*, and *Scillas* of sorts follow, and in close succession are *Narcissus* and *Primulae*. The last-named are the finest of our spring flowers; they are not only rich in colour but are very fragrant.

Primula denticulata is the earliest I have, and is rather early for a cold spring. The finest I grow are *P. ciliata*, *ciliata purpurea*, *nivalis*, and *helvetica*. *Intermedia* is very much like *ciliata purpurea*, but has a lighter eye and is more fringed than *ciliata purpurea*. The seedlings from *intermedia* are not very distinct, and, in fact, one must look very sharp to mark any difference. *P. helvetica* is free-growing, free-blooming, and very hardy, and though not so rich in colour as *P. ciliata purpurea*, &c., it is more useful for cut flowers and is very fragrant. *P. purpurea* and *P. pulcherrima* are much alike and well worth attention. *P. McMahon* and *Mrs. Siddons* are very showy free-flowering sorts. The doubles of sorts are very beautiful, but apt to die in a hot summer

unless grown in a shady place. I have seen the fine velvet-coloured variety blooming freely on the north side of a wall quite out of the sun, and, in fact, they all do well in such places. *P. cernisoides amens*, *grandiflora*, and *alba* are also very pretty and useful for cut flowers. I have grown *P. Parryi* for two years but it has never bloomed, and it does not seem to increase rapidly, as I only raised two plants from it.

Some of the *Narcissus* family are very showy. *N. pumilus* and *pumilus minor* are the earliest I know and bloom freely. The best sorts I grow are *Horsfieldii*, a great beauty; *Maximus* and *Maximus plenus*. These are very showy, but *Double Campbells* is the prettiest double, and is a fine dwarf sort for an early bed. *N. moschatius plenus* is very good, and *N. poeticus* and *poeticus plenus* are extremely beautiful and bloom after the others are over. *N. triandrus* and *N. juncifolius* are very pretty, and *N. pseudo-Narcissus var. moschatius* is a very good variety.

At the present time *Phlox Nelsoni*, *Trillium grandiflorum*, *Alyssum saxatile* and *montana* are very showy; *Gentiana*, *Dodecatheon elegans*, *Jeffreyi*, and *violacea* are coming into bloom. *D. elegans* is in my opinion the best of them; though not so rich in colour as *splendens*, it throws up fine spikes and looks well when out.

Some of the *Saxifrage*s are in bloom. *S. psalmata* is attractive. *S. coryophylla* is very good, it blooms profusely and keeps in bloom for nearly two months. *S. Mawsoni* is also good. *S. granulata plenus* when well grown is attractive. *S. oppositifolia grandiflora* and *oppositifolia pyrenaica* are beautiful, but are past long ago.

Summer-flowering hardy flowers are not so much cared for, with a few exceptions such as *Pinks*, &c. The bedding-out plants eclipse all others during summer, but flowers that bloom from September to the end of October are full of interest, and amongst them the *Anemone japonica* and *japonica alba* are very showy and useful for cutting, and many of the perennial *Asters* are well worth growing. Some of them are beautiful and fine for cutting. *A. horizontalis* is the best I have seen, and *A. longifolius formosus* is very good, also *A. pulcherrimus*, but there are a great many more good sorts. In my opinion there is too little attention paid to hardy spring and autumn-flowering plants, bedding-out plants having thrown many hardy plants into the shade. Amongst hardy new plants this year the *Spiraea japonica variegata* is beautiful, and the *Anthericum liliastrum major* is an improvement on the *A. liliastrum*, being larger in the bloom.—J. ADDISON, *Ormiston*.

PEACH CROP ON OPEN WALLS.

THOUGH this has been a very trying season for Peaches and Nectarines I have a fair crop of them. Some of my trees are loaded with fruit. *Royal George*, *Grosse Mignonne*, *Belle Bance*, and *Noblesee* are the hardiest and best with me this year. *Violette Hâtive*, one of my old favourites, has lost its place. *Elruge* and *Pitaston Orange Nectarines* are the best here this season. I believe we are now suffering in our general crop from the effects of last spring. Those trees that suffered so much from blister did not obtain a good start, and then the cold wet weather in August again checked the ripening of the wood, which is requisite to enable them to brave the cold winds and spring frosts. I became a little alarmed with my trees in the autumn, though they have never failed to bring me a good crop. Last year I gathered from May 16th to October 9th (with the exception of July) bushels; but to meet another year like last made me tremble. When I mentioned my fear to my employer he at once consented to cover our Peach wall (300 feet) with glass, and as my object is to prolong the season I have put a glass coping only 2 feet 6 inches, and use my canvas blinds with pulleys in front, and defy the frost and heavy rains. With a good Peach house and 120 feet of glass-cased wall I can keep a succession of good fruit from May until October.

I need not say anything respecting the management of my trees, but covering walls with glass and the cost of doing so I will treat of on a future occasion.—SAMUEL JENKS, *Branbletye*.

MANURE FOR ROSES.

The difficulty of obtaining animal manure here is enormous, and when procured is most expensive. None of the farmers are allowed to sell, even if they are willing to do so, which few are, and the only places where I can procure any are the hotels

at Lyme and Axminster, distant about four miles from me, so that the expense is very great—indeed, every load of manure costing me £1. At one time I never thought of expense with regard to growing Roses, but now I am obliged to do so, and have to resort to various expedients so as to avoid the great cost of buying manure from a distance.

Guano is the only other manure that I have tried except night soil, and the first-named merely as a stimulating tonic in the month of May. Artificial manures—such as bones, bone dust, nitrate of soda, &c.—I have never tried; but I have noticed that many of the new Roses sent out by leading nurserymen which I have bought for many years have bones at the bottom of the pots, and the Rose roots seem to like the attention, for they grow very strong among them. It occurs to me, then, that bones might do for Manetti Roses, and although they may not equal in any way dung manure, yet they might form a good substitute for it when the latter is unattainable. Will any of your readers who have tried artificial manures kindly give your readers the benefit of their experience?

I do not know how I may succeed this year at the shows, but I am most anxious to know the result, as I am trying a somewhat hazardous experiment. I have not manured at all since the spring of last year. I am relying this year entirely on surface-stirring, night soil in a liquid form, and guano.

The Crystal Palace Company has decided not to change the date of their Rose Show, and I think wisely. It is always a hazardous experiment changing a date, for in the crowded fortnight or three weeks great shows are sure to clash if one of them alters its fixtures; besides, the Palace Show has always been early, and has suited early soils. The Maidstone men will rejoice in the date not being altered, and those of us who are not able to show will be able to enjoy the feast of good things without any anxiety as to our own exhibits. I wish, however, the Palace would give a class for Teas for amateurs, as they will be in full bloom on the 23rd.—JOHN B. M. CAMM.

GROWING CUCUMBERS IN FRAMES.

It is not many weeks since Mr. Luckhurst gave some excellent hints on this matter, and therefore it might be considered unnecessary to call attention to it again. I do not, however, write to find fault with Mr. Luckhurst's teachings; but on the contrary, I know that success will attend his instructions. I have been so successful with frame Cucumbers this spring that I cannot help saying something about them; and besides, I fancy my practice differs slightly in one or two points from that which I have read in the Journal.

There is often more said about "making up the bed" than on any other point in Cucumber culture. I admit this may be badly done. For instance, "tramping the bed very firm" is sometimes a mistake. I made up one bed to hold two two-light frames in February. The manure was trampled very firm to "hold the heat." We had many wet days a week or two after this, and the manure became saturated and cold, and owing to its being so firm it never dried or heated again. However, during the week or two the heat was strong we attained our purpose, which was to strike a large number of cuttings. The last week in March we removed the frames from this bed, started at one end, and turned over the whole, and in doing so we mixed much fresh leaves and stable litter with it. The large heap was at once formed into a bed 24 feet long, 8 feet deep, 2 feet high at the back, and 18 inches in front. When this height was reached three two-light frames were set on, which left a margin of 18 inches at each side. The bed was then continued up outside the frames until it was level with the top. This completed the making of the bed, which was not so firmly trampled as the first one was. Before placing the light on the frames, and immediately the bed was finished, half a barrowload of half cow dung and half loam was put in the centre of each esch in one of the frames, the other two frames being intended for Melons.

About a week before commencing these operations I half filled a 6-inch pot with drainage, and the other half I filled up with leaf soil and loam. Four seeds were then placed in this about half an inch below the surface. The pot was then plunged in a gentle bottom heat in a pit, and the seed being good the plants soon appeared. By the time the soil in the hotbed was at 70° the plants were just showing their rough leaves. Many would have potted them singly then and grown them into large plants before planting them out; but I did not do this. I turned them out of the pot, took a little of the soil

with each plant and planted them out in this state. The result was that the plants with their small roots never felt the change, and during the time they would in most cases have been twisting their roots round a small pot they were sending strong roots in all directions through the half barrowload of soil and dung, and extending their leaves and shoots in proportion. When the first fruit appeared two barrowloads of the same rich mixture were added, and other two have been added since. I do not place it in the frame to heat before placing it against the roots, but I lay it at once against them, and as quickly as possible water the whole with water heated to about 85°. This warms the new soil, and settles it against the old. Tepid water has always been used since at every watering.

Two plants were planted close together under each light; one was trained to the back, the other to the front. They grew straight up in the direction of the glass, a distance of 15 inches, but before they pressed against it their point was taken out, and that caused them to throw out a number of side shoots. These soon showed fruit at the next joint to the main stem, and at the next joint beyond this the point was taken out, and this practice has been adhered to ever since, keeping them always well pinched, and never allowing the leaves to become so thick that the soil could not be seen through the glass. The heat has been well sustained in the bed, and we only added a fresh lining two days ago. The first fruit was cut about eight weeks after sowing the seed, and the quantity that has been cut these last two or three weeks, and the quantity on them at present, is something enormous. Some days we have cut as many as twelve straight handsome fruit from 15 to 20 inches long out of the two lights. The fruit does not come in weakly ones or twos, but in bunches of tens and twelves together. Scores of small fruit have been thinned off to prevent the plants from fruiting themselves to death, and with the assistance of strong manure water they seem pushing out more fruitful and vigorous than ever.

Air is admitted at the top of the frame when there is any danger of the leaves scorching. They are seldom syringed, but when they are watered it is done at "shutting-up time," and a healthy cleansing moisture rises about the leaves and obscures the glass. It only remains to be told the variety I am growing, and put it in large letters, as you will never have the chance of printing a better one—TELEGRAPH.—A KITCHEN GARDENER.

P.S.—I have mentioned my practice at a time when many amateurs and others have emptied their frames of bedding plants, and will now be planting them with Cucumbers. The system which I have adopted, and which has been successful early in the season, will if carried out be the means of insuring good crops of Cucumbers throughout the summer and autumn months.—K. G.

AURICULA CULTURE—HOSPITAL TREATMENT.

As you expressed regret that I had omitted in my last communication to describe my hospital treatment for sick Auriculas, I will now supply the deficiency. As prevention is better than cure a few words on that subject may not be out of place. And first I would say that the plants, which had been removed to the north wall, have been taken back to their stages; for although my stock has stood under the north gable for more than twelve months without protection of any kind and have all bloomed well, I attribute that good fortune to the "high cality" (locality), as an eloquent ploughman said the other day; for Cannock Chase is said to be the highest table land in England. But although from uncontrollable circumstances my plants have been behind the north wall so long, I would nevertheless caution every grower to guard against too much shade and continuous rains, as this treatment has been the cause of the death of many Auriculas. The unsuspecting cultivator views his soft-grown plants with satisfaction, when he is only deluded by a false luxuriance. The Auricula is never so sound and firm as when every watering is thoroughly evaporated, I mean when the surface of the compost is reduced to a dusty condition; and the hotter and more tempestuous the weather the more strictly should this method of watering be attended to—instead of increasing the drainage of a sick plant to increase the copious floods of water. I do not water the delicate growers until dust is an inch deep at least, yet these never flag. With yours, my friends, the case may be very different, but you may initiate your plants into this treatment by slow degrees with perfect safety. Let me plead for the

welfare of your pets, and counsel you from this time to begin to withhold water, and let small healthy foliage be your greatest pride, for the large and watery foliage is the effect of luxuriance, which may result in disease. And this should suggest the utility of silver sand; yet washed sand of any kind is better than a clog of sour compost, for that and inefficient drainage, together with the lack of sun, have produced the so-called epidemic which has so grievously contributed to cause the scarcity of the rarer varieties which many growers like myself would be glad to obtain at any price, and which may at this time have been sufficiently plentiful to have encouraged new cultivators like Mr. Weir and others, especially if the dealers accompanied every sale by a short paper on the true culture of the plant. I have wandered from the hospital treatment, which is as follows:—

Provide a flower pot in size according to the size of your invalid plants, for you must have them very near the drainage. To prepare a pot for this purpose let it be thoroughly clean and soft-baked, drill two holes at opposite sides at an inch from the bottom of the pot. Cannot do it. Why not? You need nothing but an old file, a nail-pass, and a will. First file a deep notch, then insert your nail-passer. I grow many of my varieties—such as Taylor's Glory, George Lightbody, Richard Hesly, &c.—in pots so prepared. Fill the pot nearly half full of charcoal, remembering that the top layer is small; on this you may place a layer of cocco-nut fibre to prevent the drainage being choked with the soil; but fibre is not good for mixing with the soil, for in such compost the plants will cease to have compact growth, and the pipes will come crumpled and deformed. Fibre is not the food of a soft-rooted plant, such as the Auricula or Polyanthus, for we find by turning the plants out of the pots that the roots are twisting around this fibrous matter and around each other, groping as if in search of mineral substance; and it may be matter of astonishment to the young grower to see how those fleshy roots will penetrate a piece of sound charcoal or bleached bone, therefore let their hospital food partake more of the mineral than the vegetable—sandy loam, powdered charcoal, and silver sand in equal portions, and all the better for a few small fragments of Bath stone, sandstone, or soft brick, with a good surface of silver sand, not less than a quarter of an inch deep. The sandy loam should be of the purest and poorest that can be had from an old sunny bank. When your pot is so charged, and filled within an inch of the brim, water it and make it quite level; use a flat dibble (such as a knife), open a place at the rim of the pot wherein to insert your patient, press it as close to the pot as you can without violence, leave the surface still level, and when your plant has given evidence of growth lift it gently and turn the other side to the rim of the pot, for it is that which induces new growth.

There may be those amongst my readers who would say that I dwell upon unnecessary niceties, but such an one that loves the Auricula can do all this and much more, and will keep up the inquiry from youth to age, What more can I do for my pets?—S. W. BULLOCK, Brocton, Stafford.

AKEBIA QUINATA.

THIS charming climbing plant has with me grown into great beauty. It was planted among other climbers upon a south wall about five years ago, presenting then and subsequently so insignificant an appearance that it was regarded as more curious than ornamental; but now it has grown to a large size and shows its true character, presenting itself to our eyes in a somewhat similar guise perchance to that under which it first presented itself to its discoverer in Japan, and we come to understand something of its real value as a decorative plant, and to see why it was considered worthy of introduction to this country.

The wall upon which it is growing is 12 feet high. After the slender flexile growth had reached the top it was not kept pruned closely, but was allowed to form long streamers of pendant branches, so as to break the formality of the flat wall surface as well as to enable the plant to show its true character. The not-insignificant foliage is stout in texture, dark green in colour, and is attractive from the singular appearance of the five oval-shaped lobes composing each leaf. Clustering among the foliage at this season of the year are thousands of its pretty flowers, which in their form and disposal are in singular harmony with the foliage. They are borne in short yet tapering clusters, each flower having three concave shell-like petals, forming a quaint-looking triangle of a dull pink colour suffused

with lavender. To the botanist these flower clusters present an interesting study from the fact of every one of them having two large female blooms, from the axils of which springs a bunch of some two dozen male flowers very similar in form but much smaller in size.

The plant is not one to attract the attention of lovers of bright and striking colours, but to those who care for what is curious and graceful I strongly recommend it, feeling certain it will find favour with them. It is by the introduction of plants of this type that we are able to render a garden really interesting; and it is to such plants as the Akebia that we turn repeatedly, knowing that they are worthy of something more than a passing glance.—EDWARD LUCKHURST.

ROSES IN HAMPSHIRE.

I AM an amateur gardener, and I observe weekly in your valuable Journal sundry and various incubations about the culture of Roses. I desire to add my mite to the information afforded, premising that I am no self-conceited cultivator; as Sir Isaac Newton said with regard to the exact sciences, only a learner. "Like a child picking up shells on the seashore."

I will first tell you of my experience this last winter, by-the-by the most extraordinary one as regards plant culture and temperature. I keep a book entitled "Garden Memoranda," and from this I extract—"1876, December 8th.—Cut numerous buds of Gloire de Dijon, Devoniansis flowering, also Duke of Edinburgh. December.—Cut Roses as follow: Gloire de Dijon, Turenne, President Willermoz, Cécile Forestier, Acidalie.

"1877, January.—Cut Gloire de Dijon. February 4th.—Cut good bloom of Gloire de Dijon from front of house, many buds bursting. All the above from last year's wood. May 16th.—Yellow Banksian Rose just commencing to bloom. May 19th.—Monthly Rose (Pink China), commencing to bloom. May 25th.—Cut Devoniansis and John Hopper in front of house. May 28th.—Cut Gloire de Dijon, John Hopper, Devoniansis, and Lord Clyde in front of house. June 3rd.—Charles Lefebvre in bloom."

I may mention that the above Roses this year as well as last were cut from trees planted in front of the house, south aspect. I have a rosety in the open planted without any particular shelter 71 feet by 15, on which are planted 134 Roses, principally Hybrid Perpetuals on Brissard and Manetti stocks, and generally they show a fine promise of bloom.

With regard to the usual aphid pest, I have to say that the decoction recommended by Mr. Rivers of quassia chips and soft soap has proved eminently successful. It is better than the Scotch snuff recommended by one of your correspondents lately, as it leaves the foliage entirely clean.—CONSTANT SUBSCRIBER.

FLORICULTURE AND HORTICULTURE AT OKEFORD FITZPAINE.

FLORICULTURE.—I only keep Roses (over two thousand) which are in good condition, and I think they will be a grand display. The weather for two years has been against them. "D. Deal," has asked to come and review them. I shall be glad to see Sir Henry's son, who is one of our greatest florists and a worthy and valuable man. The Archbishop of Canterbury gave him the living of Westwell, Kent, and removed him from Deal, which finds him a "sobriquet."

HORTICULTURE.—This must divide into fruits and vegetables. Fruits.—Cherries, Plums, Peaches, and Nectarines will be failures, but not total failures. Apples, Strawberries, Currants (red, black, and white), and Raspberries will be grand. Gooseberries would have been good had not the bullfinches made havoc of the buds. Soot is the best preventive. As regards the Peaches and Nectarines, the foliage is first-rate. Though they are so exposed their foliage is free from blight. Mr. Francis Rivers says in the *Journal of Horticulture*, "The cold orchard houses present a refreshing contrast to the wall Peaches, which here look wretched with blistered and starved leaves and an entire absence of fruit." I shall have enough Peaches and Nectarines, but on the whole a poor crop. There are eleven trees under glass, the Royal George and Early Princess Louise—the best early Peach—being nicely cropped. The Royal George is one of the best to have, being such a good doer in critical seasons on a wall (south, east, or west). I have 120 trees out of doors; of these twenty-seven are Royal Georges.

Vegetables.—Peas (Ringleader, Princess of Prussia, and

British Queen) are splendid, sown February 16th. Potatoes are excellent, earthed-up and uninjured. They were planted January 28th. Asparagus and Sea-kale weak, late, and injured by the last two winters. I have repaired with fresh plants the beds. Onions and Parsnips excellent. Carrots bad, and fresh sown. Do not sow early: Carrots are tender, and slugs are partial to them. The bed of Salsafy, or Vegetable Oyster, is excellent. Salsafy must be treated in the same way as Carrots. Salsafy patties are as good as oyster patties; I tasted them at the Rev. John Frymer's, at Child Okeford.—W. F. RANCLIFFE (in the *Sherborne Journal*).

P.S.—I append a list of the Nectarines and Peaches grown here. *Nectarines*.—They are all good: Lord Napier, Elrinc, Violette Hâtive, Downton, Rivers's White, Emmerlon's White, Rivers's Orange, Rivers's Pine Apple, Pitmaston Orange, and Brince of Wales—ten sorts.

Peaches.—Early Louise, Early Beatrice, Early Rivers, Dr. Hogg, Early Victoria, Early York, Early Alfred, Royal George, Grosse Mignonne, Noblesse, Violette Hâtive, Bellegarde, Alexandre Noblesse, Early Silver, Early Ascot, Magdala, Marquis of Downshire, Crimson Galsande, Gregory's Late, Walbourn Admirable, Albatross, Radclyffe, Golden Eagle, Golden Frogmore, Prince of Wales, Princess of Wales, Lord Palmerston, Lady Palmerston, and Late Admirable.

American Peaches.—Snow Peach (white blossoms), Stump the World, and Tippicanoe—thirty-two sorts.—W. F. R.

ROYAL BOTANIC SOCIETY.

JUNE 13TH.

On this occasion the Show—the second great exhibition of the season—was both extensive and good. The Exhibition was well arranged in the large tent and extended into the two corridors, which were both nearly filled, one with fruit and cut flowers, the other with miscellaneous collections of plants. The large tent was not so striking as at the May Show, when the Azaleas and Roses in pots produced such an imposing effect; but on this occasion the ornamental-foliated plants were very good, Pelargoniums excellent, and Orchids extremely rich. The principal nurserymen—Messrs. Veitch, Williams, Bull, Wills, Rolleston, and Laing—arranged admirable miscellaneous collections of plants; and Mr. Ollerhead, gardener to Sir Henry Peck, Bart., exhibited a capital group of Orchids.

PLANTS.

In the open class for twelve stove and greenhouse plants Messrs. Jackson & Son, Kingston, were placed first. They staged amongst others good examples of *Erica eximia* superba, *Bougainvillea glabra*, and *Clerodendron Balfourii*. Mr. D. Donald, gardener to J. G. Barclay, Esq., Knotts Green, Leyton, was second with capital specimens. Mr. J. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, and Mr. Wheeler, gardener to Sir F. Goldsmid, Regent's Park, were equal third. For six stove and greenhouse plants (amateurs) there were four competitors. Mr. Child was awarded the first prize; Mr. Hinnell, gardener to F. A. Davies, Esq., Anglessa House, Surbiton, the second; and Mr. Legg, gardener to S. Ralli, Esq., Clapham, third, all exhibiting good collections. For six stove and greenhouse plants (nurserymen) Mr. B. S. Williams, Holloway, was first; Messrs. Jackson second; and Mr. J. Peed, Ruppell Park Nurseries, Norwood, third. For twelve stove and greenhouse plants in 12 inch pots Messrs. Jackson & Son, Mr. James Child, and Mr. Wheeler were placed in the order named. In the classes for nine and six Roses in pots Messrs. Paul & Sons, Cheshunt, were the only exhibitors, and were deservedly awarded the first prize in each class. For six Cape Heaths Messrs. Jackson & Son were the only exhibitors in the nurserymen's class, and were awarded the first prize. Mr. Legg, gardener to S. Ralli, Esq., Cleveland House, Clapham Park, had the first prize in the amateurs' class with admirably grown plants; a third prize being awarded to Mr. Wheeler. For six Palms (open) Mr. Ley was first, Mr. Legg second, and Mr. Wheeler third. *Dracaena* and *Cordylines* were very conspicuous amongst the other foliage plants, and the first prize for twelve plants was awarded to Mr. Bull, King's Road, Chelsea, who staged *Dracaena Goldiana*, *exelsa*, *Rex*, *Mooreana*, *triumphans*, *Spathoides*, *Baptistii*, *princeps*, *ambilis*, *Chalonii*, *resinosa*, and *ferrea* variegata; Mr. Ley being placed second; the whole of the plants were in excellent condition. For six fine-foliated plants (amateurs) Mr. C. Rann, gardener to J. Warren, Esq., and Mr. Legg were placed equal first for grand collections. Mr. Donald was second, and Mr. Child third. In the corresponding nurserymen's class Mr. B. S. Williams was first, and Mr. Ley second. For six exotic Ferns (nurserymen) Mr. Williams was first for grand examples of *Gleichenia rupestris* and *spelonca*, *Dicksonia antarctica*, a *Cyathea*, *Cibotium princeps*, and *Asplenium nidus*. Mr. Ley was second; and in the corresponding class for amateurs Mr.

C. Rann was first, Mr. Donald second, and Mr. Child third, all showing large and well-grown plants.

ORCHIDS were exhibited in large numbers, there being four classes set apart in the schedule for them—two for amateurs and two for nurserymen, in the whole of which there was keen competition, and for many years past we have not witnessed a finer display. Mr. Denning, gardener to Lord Londesborough, Coombe Lane, Kingston, was first for twelve grand examples, consisting of *Odontoglossum vexillarium* with eleven spikes and a nearly seventy charming flowers; *Vanda Denisoniana*, *Cattleya Mossii*, *Odontoglossum cirrhosum*, *Cattleya Mendelii*, *Laelia cinnabarina*, *Odontoglossum Alexandra* with five grand spikes, a large *Cattleya lobata*, *Laelia purpurata* with twenty flowers, *Anguloa Clowesi*, *Dendrobium Bensoniense*, and *Oncidium crispum*. Mr. J. C. Spyers, Orchid-grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorling, was second with five plants of *Cattleya Warneri*, *Odontoglossum Phalaopsis*, *Masdevallia Harryana* variegata, *Odontoglossum crispum*, *Dendrobium Devonianum*, &c. Mr. Rutland, gardener to the Duke of Richmond, Goodwood, Chichester, was third, an extra prize being awarded to Mr. H. Heims, gardener to F. A. Philbrick, Esq., Regent's Park, for a good collection. In the class for six plants Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, was placed first, and had amongst others good examples of *Dendrobium foveosum* giganteum, *Odontoglossum crispum* (Blunt), and *Cattleya Mossii* superba. Mr. Roberts, gardener to W. J. Terra, Esq., Peterborough House, Fulham, was second; and Mr. Hill, gardener to R. Hanbury, Esq., Poles, Ware, third.

In the classes for nurserymen Mr. Williams secured first honours for twelve plants with splendid examples of *Cattleyas* *Mossii* superba and lobata, *Cypripedium biflorum*, *barbatum*, *superbum*, and *niveum*, and other choice sorts; Messrs. Jackson and Son second with a good collection. Mr. Williams was also first for six plants; Mr. Morse, Epsom, second; and Messrs. Jackson & Son were third.

For nine Show Pelargoniums (open) Mr. James, gardener to W. F. Watson, Esq., Isleworth; Mr. Turner, Slough; and Messrs. Dobson & Sons, Isleworth, exhibited good collections, and the prizes were awarded in the order of their names; and in the class for six Show Pelargoniums (amateurs) Mr. James was again first, closely run by Mr. King, gardener to R. Few, Esq., Esher, who was second; and Mr. James Weir, gardener to Mr. Hodgson, Hampstead, third. In the corresponding class for nurserymen Mr. Turner and Messrs. Dobson & Son were awarded the honours in the order named. Fancy Pelargoniums were well exhibited both by amateurs and nurserymen, the amateur growers outstripping the nurserymen. Mr. King was first with a very fresh collection, Mr. James second, and Mr. Weir third in the amateurs' class. Mr. Turner was first, and Messrs. Dobson & Sons second in the class for nurserymen. Mr. King's first-prize collection of Fancies consisted of *Tormentor*, *Roides* *Fantasiae*, *Mrs. Alfred Wigan*, *Formosa*, *Fanny Gair*, and *Vivandière*. For six Scarlet or Zonal Pelargoniums (amateurs) Mr. Cathin, gardener to Mrs. Lermite, Finchley, was first with splendid plants 4 to 6 feet in diameter; and Mr. King, gardener to R. Few, Esq., Esher, second for fine well-bloomed plants with good trusses. Mr. Turner, Brentwood, appeared to be the only exhibitor in the nurserymen's class in this section. Mr. James exhibited very fine *Calceolarias*; and Mr. Wills several of his new *Dracaenas* in superb health and colour.

FRUIT.

There was not an extensive display, but some very good produce was staged. In the class for a collection of nine dishes of fruit Mr. G. Miles, gardener to Lord Carington, Wycombe Abbey, Bucks, was first. He staged excellent Black Hamburgh and Foster's Seedling Grapes, very fine *Violette Hâtive* Peaches, Elrinc Nectarines, and Black Circassian Cherries, Sir Charles Napier Strawberries, Brown Turkey Figs, and a capital Cox's Golden Gem Melon. Mr. W. Bones, gardener to D. McIntosh, Esq., Havering Park, Romford, was Mr. Miles's only competitor, and was awarded the second prize. The collection included two Melons, two dishes of Strawberries, two of Peaches, and Black and White Grapes.

PINE APPLES were generally small, and only ten fruits were exhibited. Mr. Akehurst, gardener to J. Copestake, Esq., The Grove, Kentish Town, was placed first for two medium-sized well-ripened Queens with small crowns; Mr. Entland, gardener to the Duke of Richmond, Goodwood, Chichester, having the second place in the same class. For single fruits (Queens) Mr. Douglas, Loxford Hall, was first with a perfectly ripened but rather small fruit; Mr. Rutland being placed second, and Mr. Akehurst third. For single fruits of any other variety Mr. Miles was the only prizetaker, receiving a first award for a fair example of *Charlotte Rothschild*.

GRAPES—These were generally of excellent table quality, most of them being well finished, but a few were unripe. For the best baskets of Black Grapes (weighing not less than 12lbs) of any variety, Mr. Douglas, was placed first for excellent Black Hamburghs, remarkably regular in berry, hunched, and highly finished. The second prize was awarded to

Mr. P. S. Kay, Finchley, who also staged a capital basket; Mr. P. Edwards, gardener to Mrs. Tristram, Fowley, Liphook, Hants, securing the third prize with Black Hamburgs nearly if not quite equal to those from Mr. Kay. Three others competed. For baskets of white Grapes the prizes went to Mr. Grimmer, gardener to J. Wilmot, Esq., Pine House, Isleworth; Mr. Douglas, Loxford Hall; and Mr. Robins, Esq., gardener to E. D. Lee, Esq., Hartwell House, Aylesbury, in the order named. Mr. Grimmer's were Muscat of Alexandria, and were really superior produce for the period of the year and the late, dull, and inclement weather. Mr. Douglas's appeared to be Canon Hall Muscat, and were splendid; Mr. Wilmot secured the first honours, we presume, because his Grapes were a shade the ripest, but all the collections were good. In the class for three bunches of Black Hamburg Grapes there were five competitors. Mr. Bones had the first prize for really well-finished bunches and fine berries; Mr. R. Sowerby, gardener to the Earl of Maclesfield, Shirburn Castle, Oxon, the second; and Mr. J. Bolton, gardener to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks, the third. For three bunches of any other Black Grapes Mr. Bolton was first with very good and admirably coloured bunches of Black Prince; J. Wilmot, O. Hambury, second with Mrs. Mansfield's, all not perfectly ripe; and Mr. Holliday, gardener to J. Norris, Esq., Castle Hill, Blotchingey, third with Black Prince. For three bunches of Muscat J. Wilmot, Esq., was first with remarkably good produce; Mr. Edwards, Fowley, being second with capital bunches, but not quite ripe; and Mr. Robins third with good bunches, but the berries were a trifle irregular. For three bunches other than Muscat Mr. Douglas was first with excellent Buckland Sweetwater, Mr. Sowerby second with well-ripened Foster's Seedling, and Mr. C. W. Alderson, Langley Lane, South Lambeth, third with Buckland Sweetwater. These were stated to have been grown within a mile and a half of Charing Cross, and considering that circumstance they were highly creditable produce.

MELONS.—Twelve fruits were exhibited. For two fruits—one green and one scarlet flesh—Mr. Gilbert, gardener to the Marquis of Exeter, Barchley Park, Stamford, secured first honours with Victory of Bath and Excelsior, both being of splendid quality; Mr. Miles being second with Reid's Scarlet-flesh and Cox's Golden Gem, and Mr. Holliday third with Golden Queen and Scarlet Gem. For the heaviest and best shaped scarlet-fleshed Melon Mr. Mortimer, gardener to Major Storer, Purley Park, Reading, was first with Duke of Edinburgh, weighing 5 lbs. 4 ozs.; Mr. Gilbert being second with a fine fruit resembling Excelsior; and Mr. Miles third with The Shah, also fine.

PEACHES AND NECTARINES.—Six dishes of Peaches were exhibited, Mr. Sowerby winning with very fine Alexandra Noblesse; Mr. Cornhill, gardener to J. Virtue, Esq., Ostlands Park, being second with well-coloured fruits of Royal George; and Mr. Robins third with the same variety. Eight very good dishes of Nectarines were exhibited. Mr. Holliday was placed first for Victoria Hérite, Mr. Sowerby second with the same variety, equal third honours going to Mr. Cornhill for Pittmaston Orange and to Mr. Miles for Elruge.

Mr. Miles was the only exhibitor of Cherries. Black Circassian, good; Governor Wood and Elton, which quite merited the first prizes which were awarded. Mr. Worthing, gardener to A. Moss, Esq., was alone with Strawberries Premier and La Grosse Scérée, and had the first prize.

In the miscellaneous class Mr. Woodbridge, gardener to the Duke of Richmond, Sion House, was awarded a first prize for very fine and highly perfumed fruit of Vanilla aromatica; Mr. Douglas a second prize for large fruit of Tomatoes; and Mr. Roberts, gardener to W. J. Terry, Esq., Peterborough House, Fulham, for Vanillas.

CUT FLOWERS.

Several classes were provided for Roses, but the season was too early and the display was consequently a poor one. Mr. Chard, gardener to Sir F. Bathurst, Bart., Clarendon Park, Salisbury, was awarded a second prize in the class for twenty-four varieties, single trusses, and a similar award in the class for triplets. For twelve trusses of any yellow variety Mr. Chard was placed first; Mr. Bolton, gardener to W. Spottiswoode, Esq., second; and Mr. Soder, gardener to F. Wilt-boorn, Esq., Wadd Hall, Brentwood, third, all for Maréchal Niel. For twelve white Rose Mr. Chard won with Lamarque, Mr. Bolton being placed second with larger blooms of the same variety. For a basket of Roses of one variety Mr. Chard was first with Maréchal Niel; he also won with a basket of mixed varieties, Mr. Soder being second. The baskets were 3 feet in diameter.

The collections of cut flowers of stove and greenhouse plants and hardy herbaceous plants were splendid. For twenty-four trusses of hardy herbaceous flowers Mr. Douglas was placed first for a charming collection containing his new *Aquilegia cœrulea* hybrida, very beautiful; as were also *A. californica* hybrida, *A. chrysantha*, and *A. cœrulea*. These were greatly admired. Mr. Morse, Original Nursery, Epson, had the second prize with a very good collection; and Mr. Wheeler, gardener to Sir F. Goldsmid, and Mr. Roberts were placed equal third.

For twelve trusses of stove and greenhouse plants Mr. Douglas was again first with a choice and rich collection, which included half a dozen *Orchids*, *Antiariums*, *Heaths*, *Ixoras*, &c.; Mr. Bolton was placed second; Mr. Bones, gardener to D. McIntosh, Esq., third; an extra prize going to Mr. Morse.

In Class 4. "A group of wild flowers from a definite area of five miles radius from a parish church," brought out a remarkable, extensive, and correctly named collection from Mr. J. Green, Polea, Ware, Herts, in nearly sixty different kinds—a most attractive and interesting collection which received and richly merited the premier award. Mr. Chard had the second prize, an extra prize going to Mr. Soder.

For twenty-four trusses of *Pyrethrums* Mr. Roberts had the first prize, also a similar award for "old-fashioned plants." Messrs. E. G. Henderson & Sons exhibited blooms of their fine strain of *Mimulus*; and Mr. Douglas a bright collection of *Pansies*.

First certificates were awarded to Mr. J. Douglas for *Aquilegia cœrulea* hybrida and *A. californica*; to the Rev. A. Mathews, Gamley, Leicester, for *Pelargonium Bertie*; to E. G. Henderson and Son, Mistla Vale, for *Pelargonium Venus*, also for seedling *Mimulus*; to Mr. C. S. Wary, Tottenham, for *Vicia Fredson*; to Mr. Turner, Slough, for *Pelargonium Mrs. Pope*; Henry King, and Toby; and to Messrs. Veitch & Sons, Chelsea, for *Rhododendron Maiden's Blush* and *Azalea indica imbricata*.

Botanical certificates were awarded to Messrs. Veitch for *Acalypha Macafeana*, *Crotona reginae* and hybridus, *Gynogramma Milleri*, *Anturium Warocquianum* and *A. Veitchii*, and *Liparis elegantissimus*. Mr. Bull had a certificate for *Odontoglossum vexillarium roseum* and *Cycas media latissima*.

BELVOIR YELLOW WALLFLOWER.

There is a departure from the original form in this, at one time, pretty constant Wallflower, which seems only to increase with time. During the last two seasons I have noticed that there was a much larger per-centage of "rogues" amongst them than I at all relished, and this year I think they are more numerous still. When this is the case disappointment follows, for the gardener has depended upon their honesty to fill up an important part in one of his floral designs.

This year I have a line utterly spoiled by these "rogues." Their disorderly habits and dissipated colour have quite marred what would otherwise have been a beautiful picture. As a rule Belvoir Yellow has come quite true from seed, plants dwarf in habit and symmetrical as if every plant had been turned out of a mould; but this year, though I had my packet of seed from a first-class house, my plants are as irregular and as undisciplined as Falstaff's famous recruits. It appears to me that, in order to have this Wallflower true, we shall be obliged to propagate it from cuttings, which is much to be regretted, as it will crowd the now overful hands of the flower gardener.

I send you three varieties taken out of my border. No. 1 is what I consider the original variety, dwarf in habit, with short close-set foliage and golden yellow flowers. No. 2 is loose in habit, with sulphur yellow flowers; and No. 3 looser and more irregular in habit and growth, and with a red tinge of colour in the yellow flowers. This is my experience. Is it a general experience? I think I have heard murmurs something like this in other quarters.—X.

[No. 1 is richly coloured, highly perfumed, and has green buds; it is a valuable variety. No. 2 is bright and clear in colour, but has brownish flower buds; it is not so attractive as No. 1, and is not so sweet. No. 3 is a sad "rogue," and not worthy of a place in the garden.—Eds.]

SOUTH ESSEX HORTICULTURAL SOCIETY'S SHOW.—JUNE 7TH.

This is one of the oldest-established societies in the neighbourhood of London, the first Exhibition having been held in 1856. J. G. Barclay, Esq., is President, and the Exhibition is held in his grounds at Knott's Green. It was thought by some that the Show would not be so good as usual this year owing to the fine collection of plants of the late Mr. F. G. Wilkins having been dispersed, yet it was one of the best Shows which have been held under the auspices of this Society. Three new exhibitors of plants put in an appearance, and the exhibits were generally good.

Stove and greenhouse flowering plants were in very good condition. Mr. D. Donald, gardener to J. G. Barclay, Esq., was first in the class for eight, and Mr. J. Douglas, gardener to F. Wilt-boorn, Esq., Loxford, Hants, first in the class for four. *Apelixis macrantha*, *Stictis profusa*, *Bongainvillea glabra*, and *Heliconia tulipifera* being very well shown. In *Heaths* Mr.

Donald was first, but they were not so fine as they are usually shown.

Orchids were shown more numerously than usual, some good collections being exhibited. Mr. Douglas was first for six; Mr. Merrett, gardener to R. B. Ashby, Esq., taking the same position for three. In the collections were fine specimens of *Masdevallia Harryana*, *Dendrobium thyrsiflorum*, the Fox-brush *Aërides*, *Cattleya Mendelii*, and a *Dendrobium Pierardi* with three spikes 4 feet in length.

Mr. Donald was first for six Ferns, and Mr. Douglas first for four, very fine specimens being exhibited in each of the classes. *Davallia Mooreana*, *Dicksonia squarrosa*, and *D. antarctica* were very fine. Mr. Donald showed some excellent fancy *Pelargoniums* and gained the first prize. He also gained a first prize for *Fuchsias*. They were trained to single stems, and the shoots were hanging down in a graceful manner and were well furnished with fine flowers. Mr. Lane, gardener to Gen. Fyche, Pyrgo Park, Romford, was first for six foliage plants. *Anthurium crystallinum*, *Sarracenia flava major*, and *Coccos Weddelliana* were very fine. *Calceolarias* made a very effective display. Mr. T. Foster, gardener to R. Johnson, Esq., Walthamstow, had the best six; they were very well flowered and neatly trained. Mr. Douglas had the best six *Palms*, and Mr. Pierce, gardener to Miss Barclay, Walthamstow, the best *Coletseas*.

Mr. B. S. Williams of Holloway exhibited a fine group of stove and greenhouse plants, including some new species—*Hydrangea* Thomas Hogg, *Odontoglossum nevium majus*, Harrison's new Musk, *Bertolonia Van Houttei*, &c.

Mr. Douglas had the best white Grapes, and Mr. Bones, Havering, the best black. Mr. Fraser of the Lea Bridge Road Nurseries contributed new French *Pelargoniums* and a basket of *Gloxinias*. The dinner-table designs were better than usual. Mrs. Abbott of Wanstead had the best three in the ladies' class, and Mr. Soder, gardener to O. Hanbury, Esq., the best in the gardeners' class. Mr. Monk, gardener to W. Fowler, Esq., Leytonstone, had a first prize for a hand bouquet, also for three button-hole bouquets.

CULTIVATED MEADOW-SWEET.

I SEND for publication in the *Journal of Horticulture* the following copy of a letter which I have received from John Ferme, Esq., an East Lothian eminent veteran horticulturist.—**WILLIAM GORRIE.**

"One day, more than a twelvemonth ago, when you paid me a visit, on noticing the *Spiræa* (*Hotesia*) *japonica* in bloom, you observed that if the common Meadow-sweet, or Queen of the Meadow (*Spiræa Ulmaria*), was treated in a similar manner it would form a very desirable addition to that class of spring-flowering plants. Proceeding on your hint, I took up some roots of it from a ditch, which having been forced in a greenhouse, are now in full bloom in my lobby, where they are both ornamental and give forth a delightful fragrance.—**JOHN FERME, Haddington.**"

NOTES AND GLEANINGS.

We have received the schedule of the GREAT SUMMER EXHIBITION which is to be held at South Kensington on the 19th inst., on the occasion of the visit of H.R.H. the Prince and Princess of Wales. It is well arranged, classes being provided for all kinds of plants in season, also for fruit and vegetables. There are twenty-four classes for amateurs and as many for nurserymen and the trade. Gold, silver-gilt, silver, and bronze medals are provided, or money value in lieu thereof will be given if desired, and twelve silver cups besides good money prizes are offered by Mr. William Bull. The Show will be held in the large tent. The annual Exhibition of the *Pelargonium* Society will also be held at the same time. A very extensive display is anticipated. The medals awarded at the Exhibition of May 2nd, on the occasion of the Queen's visit, will be presented on June 19th.

At a General Meeting of the Royal Horticultural Society held on the 5th inst., the following candidates were duly elected FELLOWS OF THE SOCIETY—viz., R. S. Culbertson, Mrs. Dansey, Miss Davenport, Countess de Sallé, Charles T. Deltier, Colonel Fielden, Mrs. Goldman, E. G. Johnson, Major Charles Milligan, Sir William Muir, K.C.S.I., Stephen Scames. A list of eight guinea members elected by the Council was also announced; and the Durham, Northumberland, and Newcastle-on-Tyne Horticultural Society, Leeds Horticultural Society, Whitwick Horticultural Society, and Weston-super-Mare and East Somerset Horticultural Society were admitted into union.

— A COMMITTEE MEETING OF THE NATIONAL ROSE SOCIETY

has been held at the rooms of the Horticultural Club, when the arrangements were completed for the grand Show to be held on the 4th of July. Judges were appointed and all details settled, and strong anticipations of a very successful meeting were entertained. Forms of entry will be distributed this week; and if the present fine weather continues Roses will be in good bloom by the day of the Show.

— We have received from Messrs. James Garaway & Co., The Nurseries, Clifton, Bristol, a spike of *MIGNONETTE* which is very robust and highly fragrant. It resembles Mr. Miles's variety in having very large and nearly white flowers. It is very good.

— The last meeting of the HORTICULTURAL CLUB was the most numerously attended of any that have yet been held, and had the additional feature of the presence of some foreign horticulturists. A most pleasant evening was spent, and much interesting information elicited. Messrs. Alfred Weeks of Chelsea and J. Ashby of Bagshot were elected members.

— LORD LECHESTER'S garden at Abbotsbury, is, we are informed, now gay with a wonderful display of FLOWERING SHRUBS, of which there is a great collection. There is also a swannery consisting of 1200 old swans and 700 cygnets. The place is beautifully situated and well sheltered.

— An eminent florist has written as follows on *RANUNCULUSES* and *CARNATIONS*:—"I do not plant my *Ranunculuses* till well towards Auricula bloom. This year I planted them towards the end of April, and they are now very fine. It is the long stagnation in cold soil that is so injurious to the fine sorts; I plant therefore when the soil is warmed enough to send them on at once. If the tubers are wetted overnight before planting they will not be found so very small and brittle. In regard to *Carnations* and *Picotées* twenty-five petals are quite enough if they are petals, but I doubt if the area of forty-seven petals in one case would equal twenty in another. I do not think that twenty petals of some of the southern flowers would half fill a pod, but that is the fault of the straggleness of the petals. I think that repeating exploded and crude notions of florist flowers does our favourites no good. It is not that such reiterations shake the florists, but the unenlightened public and young growers are thereby perplexed if they see this variance, and misled if they do not."

— We have received further letters in reference to the Crystal Palace AURICULA SHOW, but it would serve no useful purpose to publish them. When "D. Deal," said "seven exhibitors competed" he of course alluded exclusively to Auriculas. He subsequently mentioned *Polyanthuses* in his critique on page 332, but the "seven exhibitors" obviously referred to Auriculas only, and every letter which we have received (except those from Mr. Dodwell) proves that the matter was so understood. When Mr. Dodwell retorted that he "paid prize money to eleven," that was misleading as applied to Auriculas. That it was intentionally misleading no one has suggested. Mr. Dodwell included *Polyanthuses*, and to these the numbers, as the public understood the question, did not apply. It was simply a mistake. Mr. Dodwell has subsequently proved on page 401 that "awards were made" to eight exhibitors of Auriculas (Mr. Dean not having received "prize money," but a certificate), and four to *Polyanthuses*. In that he is correct; so that the total number of exhibitors to whom awards were made were twelve instead of eleven, and the number of exhibitors of Auriculas were eight instead of seven. Therefore the formidable mistake has been made of erring as to one exhibitor! Is it not a trivial matter to dispute about?

— We record the death, which we regret to hear of, of the Right Hon. R. A. C. NISBET-HAMILTON, because he was a patron and promoter of horticulture. His garden at Archerfield enabled Mr. David Thomson to carry out the practice which he has detailed in his handy book of the flower garden. Fruit culture, both by Mr. Thomson and subsequently by Mr. Kettle, was also well and extensively engaged in at Archerfield. At Bloxholm Hall, Mr. Hamilton's Lincolnshire residence, Mr. Lumsden has long been celebrated for high-class vegetable and hardy fruit culture. Both these places have been figured in these columns, and we have had the best means of knowing how anxious Mr. Hamilton was that his gardens should be well kept, and to that end he engaged good men and provided them with the means of doing credit to themselves and the craft which they represented.

— "AN AMATEUR" writes as follows from Clifton, near

Bristol:—"I have a small garden sloping to the south and much sheltered from north and east winds. Last spring I sowed some seed of EUCALYPTUS GLOBULUS, and in August I planted-out the plant in a warm corner under a south wall. It has stood this winter well. A shelter was placed over it during the late frosts, but in the frost in November it had no shelter whatever. Many of your correspondents write and give their experience, but do not give the name of the place they write from; so one cannot gain much from their experience when there is no clue as to whether their letters are from Yorkshire or Cornwall."

—"BOTANICAL TABLES FOR THE USE OF JUNIOR STUDENTS, by Arabella B. Buckley," is a useful little compendium.

WINTERING ALTERNANTHERAS.

JUDGING from the loud lamentations made by gardeners through the columns of the *Journal of Horticulture* and the other gardening papers this spring, many of them have lost all, or a good part, of their stock of this most valuable of our foliage summer bedders. Having been successful in keeping a fair stock of plants through one or two winters, I may perhaps usefully describe how I have managed.

I only grow one sort—magnifica, and my first attempts at preserving a stock through the winter in the orthodox way of keeping them—that is, cuttings struck in autumn and kept in their pots in the Cucumber or other hothouse until the spring, then placed in bottom heat to make them shoot out, and so make cuttings, and thus be propagated, was a comparative failure. Well, I lost so many that it pains me now to think of it; but fortune smiled and came to me in a way I did not expect. One autumn the frost came upon me suddenly. I had a less quantity of cuttings struck than usual. There was nothing for it but taking up the old plants. I did so, and casting about for an asylum for them, as they were being forced out of the ground in this hot haste, I bethought me of the (at that time) unused propagating box at the hot end of my warm fernery. I placed them there in lines in the soil of the bed as thick as I could pack them, and from a pressure of work I could not attend to them for some time. When I did notice them I saw that they were comfortable and enjoying themselves, so I let them remain. As winter came on they began to look rather shabby but not unhealthy, so I let them still remain. As soon as they began to quicken into growth in the new year, assisted thereby by a little extra fire heat, I had them all taken up and split into small pieces, pricked out into soil in cutting boxes, and placed in the Cucumber house. They struck every one, and a finer batch of Alternantheras I never saw, so that now I never strike cuttings in autumn, but I secure all the old plants before frost damages them, and pack them away in the propagating box aforesaid, split them up in the new year, and put out into boxes, and they are no more trouble. I record this manner of keeping them now that those who like may make a note of it and try the plan when the proper time comes for them to do so.—X.

RHODODENDRONS AT DUNEVEAN.

HAVING a vivid recollection of the extreme beauty of Mr. McIntosh's Rhododendrons last year, I visited Dunevean this year almost with an impression that I should be disappointed. No love, it is said, can equal the first love, and no sight can be so imposing as the first. I thought also of the long-continued deluge of the past winter and the protracted cold of the succeeding spring, and felt that the effects of such weather would be visible on the Rhododendrons. I shall never again visit this charming garden with other than sanguine expectations, for in spite of the weather and of the great display of last year I found the garden as beautiful and as enjoyable as ever. The view from the bold natural terrace to the lawn below—interspersed as it is with stately Conifers and specimen deciduous trees, with here and there a splendid standard Rhododendron, and all around bold clumps containing thousands of these gorgeous shrubs in all the finest varieties of the day, with the bright broad stream (the Broadwater) glimmering through the vistas of foliage and flowers—is one not soon to be forgotten. Mr. McIntosh's garden has, by its intrinsic beauty and perfect keeping, forced itself into fame, and now its owner is paying the penalty of its great attractions by having to spend much of his time in the pleasurable occupation of conducting round the visitors who come to inspect and admire.

The Rhododendrons are planted in large beds. Towering

from amongst them are a few specimen Hollies and standard Variegated Maples. Near the margins of the beds and at regular intervals are standard Roses in exuberant health, and between the Roses are clumps of the Gold-rayed Japan Lilies—*Lilium auratum*. These have been referred to before and will be heard of again, and it can only be said now that, although they have been checked by the frost, the stem of one of them is 4 inches in diameter.

In enumerating a few of the more striking varieties of this unique collection of Rhododendrons they may be referred to as they are grouped, for Mr. McIntosh has given personal attention to their arrangement, and to the tasteful way in which the colours have been mixed is due in no small measure the present imposing effect of the whole. Many of the more choice varieties are planted in pairs or triplets, the interspaces containing other colours, which heighten the effect of the more commanding sorts. For instance: we find a triplet of James Bateman, clear rosy scarlet; Purity, white, yellow blotch; and Nero, dark rosy purple, heavily spotted. Then we find Purity associated with the rich crimson earlet of John Waterer. We find Charles Dickens, dark crimson scarlet, supporting the lovely Mrs. John Clutton. Another pair of undeniable beauty is Lady E. Cathcart, rosy scarlet finely spotted; and Perfection, blush and yellow, and worthy of its name. Stella, pale rose, chocolate blotch, Album elegans, and Purpureum elegans, one of the best of the purples, constitute a fine trio. Such is the manner in which they are arranged; but as space precludes the many groups being particularised, only a few more of the leading varieties—the choicest of the choice—can be noted. These are The Queen, white, a majestic flower; and nearly equally good, indeed very similar, is Exquisite. Mrs. Holford, rich salmon, is in grand condition, it is quite one of the foremost. Madame Carvalho, white, is equal if not superior to The Queen; and Miss Owen, blush, maroon spot, is extremely chaste. Another grand white with yellow blotch is Mrs. Thomas Agnew; while Mrs. William Agnew, white, shaded with pink, is one of the most striking in the collection. Of the same type is Gloriosum, truly a glorious flower, white, flushed with rose. Cynanem is a fine purple flower; and Kate Waterer, rosy pink, is unsurpassed by any of that colour. Ellen Waterer, white and scarlet, is lovely though small; and Frederick and John Waterer are equally sterling varieties. A few more, as good perhaps as any which are mentioned, are Lady Armstrong, Mrs. Joseph Shuttleworth, James McIntosh, Mrs. Russell Sturges, Crown Prince, Pelopidas, Mrs. Thomas Longman, Agamemnon, Iron Duke, Duchesse of Mecklenburgh Strelitz, Lord Everley, John Walter, Princess Mary of Cambridge, Countess Granville, Raphael, and Titan. The finest standards are John Waterer, one of the richest of all; Archimedes, Scipio, and Joseph Whitworth. These are on stems about 5 feet high with heads 5 feet in diameter, and average more than a hundred trusses on each. The varieties mentioned may be regarded as amongst the best in cultivation, and as seen at Dunevean—for there are many specimens of each variety—the effect is magnificent. The beauty of the flowers is enhanced by the high keeping of the lawn, for not a blade of grass is out of place nor a Daisy is to be seen.

Mr. McIntosh has recently added considerably to his garden by the erection of a splendid range of glass by Mr. Gray of Chelsea. This range is 140 feet long, and consists of three vineries, Peach house, and Lily house. Another range nearly of the same length of half span-roofed forcing pits is also quite new. In these pits are Cucumbers, Melons, French Beans, &c., Tender and True Cucumber being in such condition as would gladden the eye of its raiser Mr. Douglas. Amongst the Melons, which include all the newest sorts, Estnor Castle, green flesh, is the earliest and best setter. The Melons are grown and trained like Vines—that is, each plant has only one main stem. The crop is a very fine one.

There is a good collection of pyramid Apple and Pear trees, but little or no fruit, owing to the severity of the frosts; but bush fruit is fairly plentiful, and Strawberries are highly promising.

Dunevean is owned by a gentleman who is an ardent horticulturist and possesses both practical knowledge and good taste, and he is aided by a skilful and industrious gardener in Mr. Taylor: hence it is that there is so much in the garden worth seeing, and whoever visits Dunevean now will not be disappointed. It is a mile and a half from Walton station on the London and South-Western railway.

N.B.—Do not take dogs, for the small birds at Dunevean are as tame as poultry; thrushes feed at the feet of their

protector, and finches and other birds follow him from place to place when visitors are not too numerous.—J. W.

ABUTILONS AND THEIR CULTURE.

LIKE many other greenhouse plants Abutilons have made great strides of late years in the improved quality of their flowers, and still greater in the dwarf habits of the plants. Abutilons are native of Brazil, therefore require a greenhouse temperature; and the soil which is most successful for their

growth is half of turfy loam and half of well-decayed leaf soil with a good sprinkling of silver sand, the whole to be well mixed together. The plants are propagated by seed and from cuttings: the last is the better plan. Select a cutting about 6 inches long; make a clean cut below the axil of the leaf, but do not remove the lower leaves unless they are in contact with the soil, for it is important to have the foliage cover the pot as much as possible, and likewise on account of the flowers which will then be produced from the axils of the lower leaves. Insert each cutting in a thumb-pot which has been filled with



Fig. 61.—ABUTILON ROSE-FLORUM.

sandy soil, and place in a Cucumber frame or pit where a little bottom heat is provided. Keep moist and close for a few days, and shade from the sun to prevent flagging. When the roots are seen through the bottom of the pot give a shift into a 60-pot, for no plant for decorative purposes should have large shifts, or the flowering pots are too large for vases. Next shift into a small 48-pot and then the plants will commence blooming profusely, each having from twelve to twenty flowers, the plants being only 6 inches to a foot in height. If the plants are kept in these small flowering pots a little weak manure water will be beneficial. Abutilons are valuable for affording cut flowers during the winter. Those who have bouquets to make have only to take the pistil out of such varieties as *Boule de Neige*, and the pure white flowers are the more acceptable.

The best Abutilons of recent years are *Rose-florum* and *Prince of Orange*, which Mr. B. S. Williams has sent out this year, and which have been so greatly admired at the shows. The former has rose-coloured flowers and is very distinct, and the latter is orange-red, the plants being of dwarf habit and free-flowering. Add to these *Boule de Neige*, pure white; *Darwinii*, reddish orange, dwarf and free; *striatum*, orange and purple; and *ignea*, purple. The two last-named are strong growers and do well in a greenhouse and conservatory as standards. The above are six of the most useful varieties on account of their good foliage and handsome flowers, and are particularly suitable for decorative purposes; while *A. marmoratum* and *A. Thompsoni* are effective fins-foliaged plants, the latter being suitable for flower-garden decoration during the

summer. *A. Rose-florum* is the result a cross between *A. Darwinii* and *A. Boule de Neige*, and is a very distinct and effective variety—dwarf in habit and new in colour.—D. L.

ROSES.

"I HOPE anyone who reads these notes will compare them with his own experience, and let us know through the *Rose Journal* how these *Roses* grow with them." So wrote "*WILD SAVAGE*" in last week's *Journal*, and it is in the hope of giving and receiving some little *Rose* information that I take up my pen.

But let me ask, What has *Gloire de Dijon* done that he is to be left out of the list? My experience says that this, and not *Maria Van Houtte*, is the hardiest and most continuous flowering of all the *Teas* or *Noisettes*. Next in order come *Maréchal Niel* and *Devonensis*, but I am afraid all others must be classed as "*WILD SAVAGE*" classes his secondary list—viz., as varieties that may chance to give us a fair bloom, but more often do not.

May I ask for the opinion of your correspondent as to the habit of growth of *Hybrid Perpetual Duke of Edinburgh*? In the summer of 1875 I had a cutting of it given me, and inserted a bud which last summer sent up three healthy stout shoots about 2 feet long, and the blooms were splendid, but this spring the growths of the same tree and two buds inserted last summer are the most wretched puny-looking things I have ever seen. How is this?

Hoping that other *Rose-growers*, and especially young ones, will be encouraged to send us their experiences, I beg to sign myself—A TWO-YEARS ROSE-GROWER.

P.S.—One of the most important items in *Rose-growing* experience is soil and situation. My soil is a sort of non-descript garden mould, and my situation about two miles north of our "royal observatory," *Camden Square*.

VENIDIUM CALENDULACEUM.

To the long list of ornamental annuals contributed to our gardens by the extensive natural order of *Compositæ* plants the *Venidium calendulaceum* proves, says Mr. Thompson in the "*English Flower Garden*," to be a not unimportant addition, and, perhaps, among the recently introduced species few will be found of a more showy character.

Its specific name is so far appropriate that some readers may suspect it to be an old acquaintance under a new designation; but although it certainly resembles in colour and form some of the *Marigolds*, botanically it is sufficiently distinct. In the *Calendulas*, of which the common *Marigold* may be taken as a type, the involucre surrounding the flower head is composed of many narrow, pointed, erect leaflets, nearly equal in size, and arranged in one series. In the genus *Venidium* the scales of the involucre are of two kinds: those composing the innermost series immediately next the florets of the ray are of an oval form, with a thin transparent colourless margin; external to these are several rows of imbricated scales of a narrower form and covered with shaggy hairs, especially at the tip, which is reflexed.

The seed is also of a different structure to that of the *Calendulas*, as the accompanying figure will show. The *Venidiums* are more closely allied to the old genus *Arctotis*, with which some of them were formerly incorporated; but in *Arctotis* the seeds are furnished with a chafy pappus, an appendage which appears to be wanting in *Venidium*.

The present species is a dwarf annual plant, not often exceeding, even when in flower, 5 or 6 inches in height; the radical leaves are of a broadly ovate almost orbicular form, with a sinuate margin, and long footstalks more or less winged at their edge; the whole leaf, but especially its margin, nerves, and petiole, being clothed with long white, clammy, spreading hairs. The leaves at the base of the flower stalk are of a similar form, but rather narrower, and have their petioles more winged; those higher up are sessile, becoming more pointed as they approach the flower.

The blossoms are produced singly on terminal peduncles, of which each plant yields a considerable number. As those which spring directly from the root fade, others are developed from the axils of the stem leaves.

The circumference of the flower head is composed of about fifteen to twenty strap-shaped florets, arranged in a single series and of a fine light orange colour; they bear no stamens, but only a short style terminated by a stigma, divided into

two broad black lobes. The florets of the disc, or central portion of the flower, are tubular, and contain both stamens and style. Before the tubes open the disc is green, but as they expand it assumes a blackish purple tint, which is due to the black tips of the segments of the florets. The character of the scales of the involucre has already been explained, as well as the absence of the pappus, so peculiar to most *Compositæ* plants. The receptacle on which the florets are seated is slightly pitted, but otherwise quite smooth, or naked as it is termed in botanical parlance. When fully expanded the flowers are about 1½ inch in diameter. They will open in diffused light, but usually close about two o'clock—a circumstance which their showy character leads us to regret.



Fig. 62.—*Venidium calendulaceum*.

Venidium calendulaceum requires the treatment of most other half-early annuals, such as *Zinnias*, *Stocks*, *Asters*, &c. There are several other species, chiefly of perennial duration. All of them, as well as the present plant, are natives of the Cape of Good Hope.

ON DWARFING CHRYSANTHEMUMS.

As some correspondents have asked for information on this subject, we publish the following practical articles from "*The Gardener*:"—

The great objection to the *Chrysanthemum* when grown in pots and allowed its natural bent is, that it is apt to become leggy and too tall for any purpose except the decoration of large houses, entrance-halls, staircases, and such-like roomy places. Those who have plenty of time and a taste for torturing plants out of their natural habit get over this objection by following the plan adopted by the growers for exhibition. They tie their plants into any shape they please; mushrooms, spheres, half-spheres, pyramids, or standards, or any form except the one natural to the plant, which is rather straggling and ungainly. Whatever may be thought of the result of this process when it is fully realised in all its precise formality, as regards its fitness for general decorative purposes, there can be no doubt but that it is the thing that carries the day at exhibitions. He would be bolder than wise that could venture to one of the great *Chrysanthemum* shows with a set of plants grown and staged after nature, to compete with those trained according to the fashion of the present time. The judges would look at his exhibit only to condemn it, and perhaps

rightly too; for it cannot be denied that the style in favour at shows is the best that can be conceived for showing the floral effect of such a leggy plant as the *Chrysanthemum* off to the best advantage. I do not admire the fashion except in so far as it is a clever expedient to attain a desirable end—viz., the dwarfing of a natural ungainly plant in such a manner as to render it better adapted to some purposes of decoration, for which its habit otherwise is totally unfit when it is grown to anything like its natural size. But the majority of gardeners, whether they may admire the result of tying into rigid and geometric forms or not, will be precluded from indulging in the taste by its being far too tedious and time-consuming to be attainable. Those only who have practised the art can conceive of the trouble and labour of growing and training *Chrysanthemums* for exhibition, and few employers would be disposed to allow the labour necessary to grow and train them as they are done for this purpose; so that the enthusiast who aims at high honours at the shows must make up his mind to sacrifice much of his leisure time to his object. But while the *Chrysanthemum* may be manipulated so as to assume almost any shape, and can be lowered in stature so as to bring the whole of the flowers under the eye when the plants are placed on an ordinary greenhouse or conservatory stage, something more is desirable than the attainment of this by the process of tying-in or down. This is only requisite in the case of large specimen plants; and as these can only be grown in pots that are too large for many of the necessities of table and room decoration, something neater, less bulky, and handy is a desideratum that can only be attained by another and decidedly more scientific way.

The practice of striking cuttings throughout the summer months, and of layering the flowering stems after they have commenced breaking to form the flower heads, if carefully and skilfully done, enables the gardener to have flowering plants in autumn and winter of the most compact and handy sizes, varying from 6 to 18 inches in height. I have never practised the layering method, and shall not, therefore, venture to express an opinion on its merits as compared with those of the method of striking cuttings of the extremities of the flowering stems at different periods throughout the summer and autumn months; but I am perfectly satisfied that the usefulness of the *Chrysanthemum* may be greatly enhanced by the general adoption of either plan. Its season may be prolonged, and it can be adapted to a variety of purposes for which when grown in the ordinary way it is unsuitable.

In order to succeed perfectly with the dwarfing of the *Chrysanthemum* by means of striking the tops of the stems after they have advanced nearly or quite to the branching stage preparatory to setting the flower heads, two considerations are of the utmost importance. The first consideration is to have the plants in a very vigorous state, well fed, and growing freely; and the second is to be prepared with a sweet mild hotbed in which to strike the cuttings. To grow plants that will flower freely at the height of about 18 inches or 2 feet a batch of cuttings may be put-in in the latter end of May or the beginning of June; but this is an entirely different thing to that which is obtained by striking cuttings off the extremities of the flowering stems two months later in the season. The cuttings for the former may be taken at pleasure either from the extremities of the growing stems or from suckers proceeding from the base of stems, or from the roots; but in the latter it is essential that they be taken from the tops, and also that there should be some determination towards flowering in the plants before they are taken. Whether the cuttings should be grown singly in pots or several together is a consideration to be determined chiefly by the period at which they are put in. If they are inserted in July (and two batches, one in the first week and another in the third week, may be put in then), they are better done singly; but if done later than this it is better to put several cuttings together in one pot, the cutting pot being chosen as small as possible in order that when struck the plants may receive a good shift into a compost of concentrated richness. The cuttings require to be propagated in the ordinary way, choosing always the strongest. Not a leaf should be removed from the base that can be retained in preparing them for insertion in the soil. A good many more cuttings than may be wanted to grow on should be put-in in each batch; all do not turn out equally promising, and only the best or most vigorous should be grown on. They root quickly, and while they will not bear being kept very close while they are callusing and forming roots, neither will they endure much ventilation or any exposure to sunlight. When

rooted gradually inure them to more air and light; but as a good deal of the success depends on the management at this stage, it is requisite to be very careful not to begin hardening-off too early. There should be no time lost in potting them on after they are well rooted, and it is better done before they are fully hardened off, because they will more freely strike into the new soil while being kept a little close than after they are placed in a fuller exposure to light and air. The compost should be very rich, but at the same time open and light. It matters little of what it is composed if it is highly nutritive and, at the same time, sweet and porous.

In the case of the July batches two shifts from the cutting pot may be necessary if the first shift is a small one; but it is better, I think, to give only one shift, deciding first what size of pots are best for the object in view. Those of 5½-inch and 6½-inch diameter will be found quite sufficient to develop well-furnished and well-flowered plants in from the July and August batches, but those struck in June will require more pot room. Close attention will be required in watering the plants, especially after they have filled their pots with roots, and liquid manure may be frequently applied with great benefit. Till the beginning of September they should not be placed in the full blaze of the midday sun, nor should they be shaded from it by any artificial means; but if placed where they may have the morning and afternoon sun they will escape the liability to scorching at both root and top which would otherwise occur, no matter how well they are attended to in regard to watering. But from September till the time they are taken indoors they should be freely exposed to light and sheltered from heavy and continuous rains.—W. S.

PRACTICAL ENTOMOLOGY.

FORTY-FIVE years ago when the history of "blights" was indeed dark—notwithstanding the labours of those giants of entomology Kirby and Spence—"RUSTICS" wrote:—"I maintain that there can hardly be a greater service performed to horti- and agri-culturists than by pointing out to them the nature and habits of their insect enemies." Since then the honoured names of Curtis, Newman, Westwood, and Murray stand forward amongst those who have done, or are doing, good service to the country by directing attention to the histories and remedies of the insect pests which yearly cause it a heavy loss; but still the subject requires to be more borne out by the public at large, for the words of Edward Newman remain as true as when he wrote them. Agriculturists know only too well the difficulties and losses, but it is only occasionally they have the time and special knowledge requisite to work out the observations how best to meet them; and entomologists, though acquainted with the history of the insects themselves, are often unacquainted practically with the working of the prescribed remedies, which are necessarily not adapted for the exigencies of each special case. To do good both must work together. Unless the cause of disease is known prevention is impossible and cure impracticable, and, besides the history of the insect, we need returns of the amount of its presence or absence under various circumstances to know which is the predisposing or counteracting one.

"The progress of every science depends upon the discovery of facts, which may be called scientific practice, and upon the conclusions deduced from them—that is, on theory and practice. They may be compared to the army and diplomacy in statecraft. Diplomacy wages no actual warfare, but is not seldom the cause of it: and the soldiers have to make experiment after experiment, to marshal facts against facts, until it appears which side is the stronger." So writes Professor Max von Pettenkofer in the current number of the 'Contemporary Review'; and with that axiom in view, our aim now is to develop and weld together the soldiers and diplomatists of agricultural entomology. With this view a pamphlet has recently been printed, accompanied by ruled and columned sheets for the purpose of recording monthly observations on certain selected insects, for the most part remarkable for the injury they cause to our common crops. For convenience of observers the sheets are accompanied by short but popular descriptions and clearly-drawn figures of the insect pests, which it is hoped may save all difficulties in ascertaining what insect is intended, and guard against consequent errors. Thus it is now hoped to obtain a general series of observations through the country, which, if followed up even partially, cannot fail to be of service; their object is to arrive at cause and effect as influenced by various conditions of locality, weather, soil, and more espe-

cially cultivation, with a view to the suggestion of remedies, prevention of insect attack, or limitation of injury. The distribution of these papers is somewhat of an experiment, but similar observations taken and recorded by members of the Meteorological Society have not been without benefit; and it is hoped that agriculturists, horticulturists, and field naturalists will each lend their best support as the object is a worthy one. If reliable information can only be obtained from competent observers (which on the prepared forms would cost them but a few minutes' occasional labour), it is intended to digest it into a report primarily for the benefit of the observers, and which could not fail to be of great value to the country at large. Few but those scientifically or practically concerned know the heavy losses constantly going on from insect causes in the crops; but it is only by co-operation in observation that the root of the evil can be thoroughly reached. Further information may be obtained of the Rev. T. A. Preston, Marlborough, Wilts; or of Edward A. Fitch, Maldon, Essex."—(*Entomologist*.)

CHAPTERS ON INSECTS FOR GARDENERS.

No. 13.

THE modern philosopher who can explain every natural phenomenon beautifully if you will only grant his theory that, time enough being given, the oyster of one era can develop into the man of a later era, accepts the circumstance that insects of one order sometimes closely resemble those of a different order, and fits together theory and fact, to his own satisfaction at least. What his idea about it is need not concern us here; but it is singular that certain of the moths which follow the Hawk Moth group so closely approach in size and in form the various species of flies that at a little distance of even a naturalist might be deceived. We who recognise in this and similar instances the hand of a Creator operating, not from caprice but wisely—if we do not see the reason for such resemblances in all cases, may yet be satisfied that they are not merely accidental. Many birds feed both on moths and on flies, probably they give the preference to the latter; yet it may partially account for the scarcity of some species in the Clearwing family of moths, that just when they come out on the wing sundry flies rather like them are abroad, and followed up by bird enemies. But the resemblance may also be occasionally protective, for I have seen a gardener running about in the June sun, armed with scissor-net, in chase of Currant Clearwings, much balked by his frequent captures of the flies which he swept off the leaves where they settled in proximity to the moths.

In the little group of *Sesidæ*, then, we have moths which are as fond of the sunshine as are the butterflies, though they may also be observed hovering over blossoms in the dusk of evening. To one or two species, however, honey offers no attractions; and though they must use their wings at times, either from their stealthy mode of flight or their similarity to the Diptera, little is known about their aerial performances. But what Newman says of the majority is quite true: in their movements they are indeed "elegant, graceful, and fairy-like." Though the long legs are like those of flies, the long thickened antennæ when inspected at once suggest the kinship of the species to such huge moths as the Privet Hawk for instance. The transparent and narrow wings have little colouring, but the body has a variable number of bright belts and a fan-like tuft at the tail, which is expanded when the insect is on the wing. Beauty, however, is no characteristic of the caterpillars of the Clearwings, their resemblance to the maggots being marked; and though they possess feet they seem helpless in crawling, their mode of life being that of a miner, and their dexterity in wriggling up and down the galleries they make in stems or twigs is considerable. Thus hidden from view these caterpillars can do some damage to plants while the cause remains undiscovered, for, as a general rule, the habitation of one of these larvæ continues in a living if not in a thriving state until the creature no longer requires it. The language used by Mr. Wood in reference to the Clearwings is assuredly exaggerated, for he declares they rank amongst our worst foes, and that, supposing them a little more numerous, they would be as much dreaded as the wireworm and Turnip fly. But which is the most troublesome species of all the *Sesidæ*? Undoubtedly *S. tipuliformis*; yet from a continued series of observations on the habits of this species I am enabled to state that if it kills Currant bushes it does so very slowly, nor does it materially interfere with the productiveness of the bushes

in ordinary seasons. Moreover, the insect is not by any means generally distributed, though when it has once appeared in a locality it usually manages to keep up a succession, despite the gardener's watchfulness. Cutting off twigs or branches that appear dead does not much affect the caterpillar of this Clearwing, because it is not easy to track the caterpillar from the old mines to those it has subsequently bored. The growth of the caterpillar is slow, as is the case with other pith-feeders, the life being, as I think, extended over two seasons, but there is always an annual flight of the perfect insect.

Remembering this species in its yellow-banded body, yet distinguishable by the lighter hue of the legs, is the Yellow-legged Clearwing (*S. cynipiformis*), which draws every June a small party of eager-eyed entomologists to an investigation of the Elm and Oak trees in Hyde Park, where the species has regularly occurred for many years. It is found also in a few other places, especially on the coast. The caterpillar leads a somewhat different life from that of *S. tipuliformis*, for it forms galleries on the trunks of the trees just under the bark, on the surface of the wood, and it resides, as I imagine, at its earliest period in the bark. No injury seems to be attributable to its influence, as the caterpillars are not crowded into a small space on the tree, and young trees are rarely visited by the moth. More can be alleged against the character of *S. myopiformis*, one of the three species of Clearwings having a red belt encircling the body. In some of the orchards at Fulham and Putney it is (or was) pretty common, feeding in the wood of both the Apple and Pear, giving preference to the branches, though now and then piercing a line of galleries in the trunk, where a number of the caterpillars have been observed burrowing in close order. The fall of some branches in a gust of wind must be ascribed to the work of this Clearwing; but so far as I am aware instances of its killing trees are uncommon, nor does it appreciably interfere with the production of fruit in the orchards it frequents, and beside such a species as the Little Ermine Moth it is but an insignificant foe. Possibly, since the Red-belted Clearwing is found in two districts of Surrey and Middlesex adjacent to each other, the slight-looking moth is equal to the bold feat of flying across the Thames.

The Large Red-belted (*S. Culiciformis*) is a wood insect, the moth depositing its eggs on Birch stumps, though it will attack growing trees: it is similar in habit to its brethren. Also red-banded as well as red-tipped is the Red-tipped Clearwing (*S. Formiciformis*), not uncommon near London amongst the Osier beds on the upper Thames. The moth is abroad at midsummer. The caterpillar lies hidden in the pith of various species of Salix, liking best small twigs. Though it has been reported as prolific enough to be injurious to the Osiers in some years, I have never heard of an authenticated instance of recent date. In point of fact none of the Clearwings are particularly prolific, and one or two species have been less common than formerly. Passing several rare and local species we come to the couple of Hornet Clearwings (*S. Bombyciformis* and *Apiformis*). The latter, which is the more frequent of the two, has so close a resemblance to a hornet that each summer it alarms a number of nervous people; it is also able to produce a humming sound. But it is quite harmless, nor does the caterpillar do very material damage to the Poplar, though it sometimes attacks saplings, feeding unseen for nearly two years. *S. Bombyciformis* in the larval condition resides within the branches of Sallow or shoots of the Osier.

In the family *Zeuzeridæ* there are only three British species, two of these being important from the destructive effects they produce upon trees. The large Goat Moth caterpillar (*Zylenes Cosens*), is often to be seen at the heart of some Willow or Poplar, which has on account of its unpromising condition been doomed to the axe, and occasionally at early morn a caterpillar may be seen taking an excursion from one tree to another. Despite its size, the Brown-winged Moth is seldom noticed, though it rests on trunks of trees in the daytime, for its colour harmonises with the grey or brown of the bark. Every female killed before oviposition has taken place is a gain in a park or plantation, as thereby hundreds of larvæ are stifled ere birth, and as the caterpillar life lasts two or three years, the quantity of wood a single individual can devour or damage is considerable, though it will seldom happen that one caterpillar can effect the ruin of a tree. And under all circumstances it should be remembered that the mischief done is not solely traceable to the jaws of the caterpillar of the Goat, for the air-holes it pierces as it grows large admit rain and frost to the heart of a tree. The diseased mines of the Goat caterpillar are, besides taken possession of by other insects,

notably by the larvæ of a beetle called *Scolytus destructor*, which is often reputed to be the destroyer of Elms, when it is only the finisher of a mischievous work done by the far larger Lepidopterous larva just named. In certain states of the weather the peculiar smell that engendered the name of Goat may be perceived some short distance from the trees haunted by the caterpillars. Many wonderful narratives have been published descriptive of the muscular force that the Goat caterpillar is endowed with, and after the accounts of its biting a hole through a sheet of lead, and upheaving a tumbler on which rested a book weighing several pounds, we are prepared to credit it with any feat. The horny flattened head at once suggests great strength, and its movements are aided by a horny plate on the next segment, while each succeeding segment has a formidable array of muscles.

The Leopard Moth (*Zenzera Æsonii*), less in size than *Z. Cosmæ*, is too well known as an enemy of trees, attacking the branches as well as the trunks when a larva, and in our London suburbs it has wrought the ruin of many an Elm, Horse Chestnut, and Laburnum. I have also seen more than one *Acacia* killed by it; and the late Edward Newman, long ere his decease, was convinced that the opinion he once expressed in print, that the Leopard did not destroy fruit trees, was an erroneous one. In some districts of Kent and elsewhere the larvæ have wrought sad havoc amongst young Ash trees grown for use as hop-poles. But it does seem, as stated by Newman, that in various instances Pear and Apple trees which are infected exhibit a kind of spasmodic activity, and for a time bear more fruit. An array of black spots on the bark enables us to distinguish the caterpillar of *Z. Æsonii* from the livid-coloured *Z. Cosmæ*, in other respects excepting size they resemble each other.

In the family of Hæpialide, the moths of which have peculiar short and simple antennæ, we have root-eating larvæ, but they principally attack plants in hedges and waste places. One of the species, popularly called the Ghost Moth (*Hæpialis Humuli*), has been named from the Hop, although the caterpillar has been unearthed from the roots of the Dead Nettles and allied species. Another, the Common Swift (*H. Impluvis*), is often seen near gardens flying in a dashing manner, as do all the five species.—C.

APPLES.—About 250,000 barrels of Apples were last year shipped to Europe from the United States. More than half of this quantity went to England, which annually imports \$30,000,000 worth of fruits, and yet, says an American contemporary, the British grower has a decided advantage in producing most of the varieties on his own soil. The hint might well be taken by English landowners.

HANGING BASKETS.

Few objects add more to the adornment of a pleasant window, or the decoration of the parlour or drawing room, than hanging baskets tastefully filled with handsome-foliaged and flowering plants; but though now more frequently seen than formerly, they are still far from being as generally sought after as their real beauty demands. A very good position can often be found for them when there is no good convenience for plants in pots; and even where there are, one large and beautifully arranged basket, when taken care of, is far more satisfactory than a window full of inferior-looking plants. Indeed, it is only under the favourable conditions of a swing window and moderately heated rooms, without the use of too much gas, that plants in small pots can be kept for any length of time in a vigorous and healthy state. Baskets, however, in consequence of the larger bulk of soil, are not subjected to the same alternation of dryness and moisture, and admit of the use of plants which withstand more neglect than when growing singly in pots. As decorative objects, both from the position they occupy as well as their variety and masses of foliage, or foliage and flowers, hanging baskets may be considered among the most attractive and beautiful.

Baskets are made of different forms and of various materials, such as wire, terra-cotta, and wood. The wire baskets are very beautiful when properly filled, but unless of tolerable size they dry up quickly and require extra time and attention. Terra-cotta baskets are very neat and ornamental, and some of the patterns representing logs of wood quite natural and pretty, but they are not so well adapted for mixed plants as for a single plant of some vigorous-growing kind which will soon cover with its trailing stems. For general purposes the rustic baskets

form the best floral adornment; and the plants which are best adapted for this purpose seem to like the rough interior, creeping, rambling, and trailing over it in a free and natural way as they do in their native woods. When wire baskets are selected they should be lined with a thick layer of moss over the sides and bottom, to prevent the soil from working through.

SOIL AND DRAINAGE.—The first requisites are a suitable soil and good drainage. Generally the latter is neglected or not considered necessary, and the consequence is that unless the watering is done by tolerably skilful hands the soil becomes waterlogged, sour, and cold, and speedily the plants show the effects of this. When, however, there is some drainage, water may be given more freely and without the same danger to the health and vigour of the plants. A small hole is sufficient to allow superfluous moisture to pass off. The compost should be a mixture of good, fresh, loamy soil, and very old decayed manure or leaf soil, with a small quantity of sand.

SELECTION OF PLANTS.—This, of course, will depend very much upon the taste of the planter, the position which the basket is to occupy, whether shady or sunny, and the temperature where it will be kept, especially in winter; for some plants which are admirable for summer are unsuitable for winter. With the exception of one or two plants for the centre, which should be of erect habit, the others should be mostly those of branching, rambling, or trailing growth. Strictly speaking, very few handsome-flowering plants of difficult culture should be planted; the aim should be to have a good combination of beautiful foliage contrasting in colour, and only a few flowering plants. Our collections contain variety enough, but adaptation to the position is what is most important. For the central plant a *Dracæna* with its crimson-purple or bronzy foliage is distinct and very showy, or one of the small half-hardy *Palm*s, or a *Croton* with its green and gold-blotched leaves. For the filling-up, the following may be named as well adapted to the purpose, and, tastefully arranged, form very ornamental groups—the old and always pretty variegated *Periwinkle*; *Cobæa scandens*, a free-growing and handsome runner; *Maurandias*, white, red, or blue; the old *Cineraria maritima*, or *Dusty Miller*, with its silvery leaves, is still effective because it flourishes where other silver-leaved plants often fail; *Abutilon Thompsonii*, with gold-spotted leaves; *Centaurea gymnocarpa*, and the handsome variegated *Iris*. For the outer edge of the basket, the tiny *Othonna crassifolia*, with slender stems and yellow blossoms; the variegated *Sedum*, and the *Tradescantias*, two or three varieties; the dwarf *Mirandata*; the *Coloseum Ivy* (*Lianaris*); the variegated and green *Saxifrage* or *Strawberry Geranium*; and among *Ferns*, which must not be omitted, the silver-leaved *Pteris*, *Adiantums cuneatum* and *pubescens* and *Pteris tremula*, as well as the taller and rapid-growing *Nephrodium exaltatum*, which thrives in sun or shade. For trimming around or up the handles nothing is better or more pleasing than the common *Ivy*, or the *German Ivy*.

One thing should not be forgotten—not to select too large plants; for if large, so much soil has to be removed that the plants suffer materially. It is better to choose rather small specimens, which will leave room to fill up with good soil, in which the roots soon take hold, and the plants all grow up together, forming a mass of foliage which appears more natural and beautiful than when the larger plants crowd out and nearly destroy the smaller before they get well established. After all, with a list of the right kinds to select from, the fine effect of the basket will depend much upon the taste in arrangement.

CARE OF BASKETS.—Watering is principally essential to ensure a beautiful hanging basket. The soil may be right, the drainage good, and the plants properly planted, but neglect in watering will soon spoil all the labour. They should never be allowed to get too dry, neither should they be constantly wet. Experience is the only sure guide. Wire baskets filled with moss require the most attention, and need occasionally to be wholly immersed in water, so as to wet them through. All baskets may be sprinkled every day, and at least once a month. Plants with large foliage should be gently washed with water at a soft sponge. It is a good rule to let the basket occasionally get rather dry, and then to give a thorough soaking. This aerates the soil and gives greater vigour to the plants. If the position in the window is too hot and sunny a newspaper thrown over the plants will benefit them, especially before they are well established. If we could be sure of proper caution in its use, where the plants appear to have exhausted the soil we would advise one or two waterings with liquid manure, quite weak; but so many failures have been made that it is rather unsafe to dabble with ammonia, guano, and other fertilisers.

It is only where the plants are well established and growing vigorously that fertilisers should be given; to attempt to force the plants into growth is sure to result in failure. Occasionally go over and pick off all dead or decaying leaves, and destroy any insects which may be disfiguring the plants.—(*American Cultivator*.)

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

Now that high drying winds have succeeded the long-continued cold and wet weather it will be well to look to fruit-trees which were planted last season, and especially to such of them as were planted late in the spring. If previous instructions have been attended to, the trees will have been secured to stout sticks to prevent their being shaken by the wind. It will be well to see that the fastenings are secure, and if the buds do not break freely let the trees be syringed twice a-day—in the morning about six, and at about the same hour in the evening. If the soil around the roots is dry let it be well watered, and the mulching of short manure that was recommended to be placed over the roots will serve to retain the moisture.

Horizontal-trained trees on the walls have made much healthy growth; this has been cut back to within two or three eyes of the base of the growths, and the young wood on such trees which have not filled the space allotted to them has been carefully secured to the wall. It is usual to train the leading growth of such trees in a vertical position, and if the growth is allowed to grow to the end of the season it may run-up about 6 feet. Instead of this, stop the leader when it has grown about 12 inches, back to 9 inches, when it will start again and also throw-out lateral growths. Let the leader be again trained upright, and the two lateral growths horizontally; in this way the wall will be much more quickly furnished than if the leading shoot had not been stopped.

The Strawberry beds ought now to be well watered and mulched with manure. We hope that the blossoms will set well on the plants out of doors to compensate us for those in the orchard house, which have set very badly indeed. They happened to be in flower just at the time that the dull cold weather and severe frosts at night set in, and as it was not convenient to heat the house, the result was that we have scarcely ever had such a bad set of fruit. The plants out of doors are crowded with blossoms. All that is wanted now is some tropical weather to carry the fruit to perfection. To have produce of the very best quality it is necessary to thin the fruit out, and some clean straw must either be placed under it as it begins to ripen, or small branchlets from the ends of Pea sticks must be stuck round the plants to support the trusses. The fruit always ripens best in that way in a dull cold season, and being raised above the ground is much more readily protected from wet.

It is a good plan to look over Gooseberry and Currant bushes and to thin-out any superfluous growths. It is quite as necessary to do this as it is to thin-out and train the young wood on wall trees; air and light are more freely admitted to the fruit, and the wood having more space is stronger and better ripened. We have kept the Dutch hoe at work amongst Raspberry bushes, Strawberry, borders of dwarf and pyramid trees, and all open spaces where there might have been any weeds. If the dry weather continues we shall mulch and water when necessary.

PINE HOUSES.

Unless it is necessary to hasten the ripening of the fruit it is quite as well not to use much artificial heat from the hot-water pipes. Nothing is gained by it when the weather is warm; indeed, it is a question whether the plants are not injured thereby. Of course there ought not to be any insect pests on the plants, but if there should be they will spread much more rapidly in an atmosphere artificially heated than they will in one where artificial heat is reduced as much as possible or altogether. The house ought not to be shut up close if there is any fruit ripe or nearly so, but if no fruit is swelling-out the house may be closed at four in the afternoon, or earlier or later as the sun may act upon it. All plants not potted into their fruiting pots and intended to ripen early next season should be attended to at once. It is well to have the fruiting pots thoroughly filled with roots by September, so that the plants may enjoy comparative quiet for two or three months. It is not possible to be regularly and completely successful in the culture of any fruits unless a rest of this length can be provided. Strong snickers put in now and grown-up without any check would make good fruiting plants for next season, but they are not as a rule adapted for very early forcing.

PEACH HOUSE.

The earliest trees will now be producing fruit for the dessert. It has been rather a difficult season for forcing Peaches, but the earliest houses have done pretty well, as at the time the trees were in blossom the weather was not unfavourable to the setting

of the fruit, and, this over, all the rest is easy enough. A net ought to be fixed under the trees in some way to catch the fruit and prevent its being bruised. It is not a bad plan to look over the houses daily and carefully gather all fruit that will part readily from the trees. It requires a little experience to do this, but those who are accustomed to it can tell which fruit are ripe and may be most readily gathered without injury. No fruit is easier injured, and if it is bruised in the least it rapidly decays. It ought to be laid carefully in a flat basket on a sheet of cotton wadding and tissue paper, and no more handling should be allowed until it is to be used. Peaches and Nectarines gathered just before they are ripe and removed to an ice house will keep for a considerable time. They will also retain their freshness in a cool room behind a north wall, and the more equable the temperature can be kept the better. The fruiting house should have the ventilators quite open night and day, and no moisture is needed from evaporation. As soon as all the fruit is gathered give the trees a thorough watering over the leaves with the garden engine. In later houses, where fruit is swelling freely after a stony, syringe freely with tepid water night and morning, and shut up as early in the afternoon as possible; if the temperature rises to 90° it will do no harm. Of course when the fruit approaches the ripening stage less heat is desirable, and the syringing must be discontinued.

GREENHOUSE AND CONSERVATORY.

We alluded a week or two ago to the difficulty of doing equal justice to plants in flower and those which have ceased flowering and are making their growth. This is more apparent at this season than at any other. Many hardwooded plants are injured if they are placed out of doors at this season of the year; and what they require is a light well-ventilated position protected alike from hurricanes of wind and heavy rain. A canvas structure will not answer, as it is too dark and draws the plants. Where there is a house specially for such plants no difficulty arises. In our case we have not such a house, but we have a few frame lights available, and these have been utilised by erecting a light framework and placing the plants under the lights. They are protected from rain, and if a high wind should arise some shading material will be nailed on to the exposed side. Heath, Epacris, Hedera, Apelexes, &c., have been placed out under the lights, and they will receive that treatment best adapted to their several requirements. Of course all plants which are in flower are kept in the greenhouse until the flowers fade, when they are also removed out under the glass lights. During the present drying weather flowers rapidly fade, and the house does not look well unless they are removed at once.

It is usual to insert cuttings of stage Pelargoniums when the flowering period is over, but there are always some short-jointed cuttings to be had early in June, and if these are taken off at once and each cutting planted singly in a small pot, they speedily form roots and make very fine plants by the autumn. Each of such plants if managed well in the way of stopping and potting will produce from a dozen to a score of good trusses of flowers in 6 and 7-inch pots. *Lapsageria rosea* and *L. alba* are now making very rapid and good growth. The best treatment for the summer months is to keep the plants in a cool house and syringe freely once or twice a-day. The growths must be carefully trained as they advance, else they twine and interlace each other in a way that makes it difficult to untwine them again without breaking-off many of the leaves. Azaleas which have finished flowering have had all the seed-pots removed, and the plants have been placed in a house where they can enjoy a stove temperature and be freely syringed. Any strong growths that seem inclined to rob the others of their proper share of nourishment are stopped, and plants that require repotting are attended to at once.

FLORIST FLOWERS.

The National Tulip Show was held on the 5th, and the Northern Counties Show on the 8th. As far as we can hear most of the principal growers were not able to show their best blooms owing to the lateness of the season. It was not so with us, as every one of the blooms are over, and the seed vessels have been removed to prevent their doing any injury to the bulbs.

Pinks come next in order, and they ought to be at their best at the date of the next great show at South Kensington, but we doubt if a dozen flowers will be on at not less than 150 plants; they are quite two weeks behind, but are looking remarkably well. The beds are mulched, and are watered as they require it.

Anriculas are now in ordinary garden frames requiring little or no heat. This is the best position for them in all gardens south of the Trent. In the north of England and in Scotland, if the back of the frames are turned to the north it may be sufficient. The flower stalks of Carnations and Picoetes are fastened to sticks as they increase in growth. The plants must not suffer for water at this season, else the blooms will not be good.—*J. DOUGLAS.*

TRADE CATALOGUE RECEIVED.

J. Linden, 52, Rue de Chaume, Ghent, Belgium.—*Illustrated Catalogue of New and Rare Plants.*

TO CORRESPONDENTS.

* * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post.

EXHIBITING HARDY FLOWERS (*R. H. C.*).—Erythrinas, Sparaxes, Ixias, Ecomia purpurea, and Antholizes are not hardy. All the other plants in your list are hardy.

GERANIUMS MILDEWED (*Pelargonium*).—They require more ventilation and a less damp air.

ROSES AND GERANIUMS (*R. H. C.*).—We cannot name them from cuttings.

UNHEALTHY CUCUMBERS (*A. B. C.*).—Your plants appear to be quite useless, and we should therefore destroy them and plant others from a healthy stock and in fresh soil.

ROSE LEAVES BLACKENED (*Zygo*).—Your Roses appear to be infested with the black fungus. Dissolve 2 ozs. of Gishurst compound in a gallon of water and syringe the trees, and then dust them with soot when the leaves are wet. The solution will retain its strength "for a week or two" after being mixed.

CAREFUL-TENDING PLANTS (*Kittie*).—You will find the information you require in an early future issue of the Journal.

FUNGUS ON PEAT (*F. W.*).—We could find no fungus on the peat you sent. It was all loose in the box, and was only a mass of dry powder. We should remove the surface soil if much infested with fungus and replace with fresh soil.

FUNGUS ON ROSES (*Surrey Gardener*).—We think your Roses are infested with the orange fungus. Sponge the leaves with 2 ozs. of lime virid (an excellent sulphur) dissolved in hot water and added to two or three gallons of cold water.

SOUTH KENSINGTON SHOW (*Sussex Gardener*).—The charge for admission is 8s. 6d., but if you procure a ticket through a Fellow before the day it is 2s. 6d. The gardens round London worth seeing are Kew, Chiswick, South Kensington, Royal Botanic, and Kennington. If you wish to study these well you will take home a mass of instruction with you that may be of great service.

ORCHIDS FOR IMPORTATION (*O. C. H.*).—From Manilla several species of *Phalaenopsis* may be sent, but the best are *P. Schilleriana* and *P. amabilis*, before being sent. *Cypripedium levissimum* is also found there, and is a very choice and rare plant. From Bangoon may be sent *Vanda carulea* and many species of *Dendrobium*, including *D. thyrsiflorum*, *D. Denisonii*, *D. Wardianum*, *D. crassinode*, &c. *Acridas Schilleriana* is a rare species found in Borneo.

PRICES OF FRUIT AT COVENT GARDEN (—).—The prices quoted for Strawberries are prices obtained for those sent up from the country, which never sell for prices equal to those grown near London. For the country fruit there is very little demand, while good morning-gathered fruit are arriving from the market gardeners near London, for this reason—the country fruit is always gathered overnight. It is quite unnecessary for us to quote the prices of London fruit, as it would only mislead country readers and make them dissatisfied. The prices quoted in *The Times* appear to be those of a very exorbitant retailer, and such prices are only made on very exceptional occasions.

CALIFLOWERS EARLY IN JUNE (*Maine Cat*).—This is an unusually late season, and the Califfowers you refer to have had the protection of glass over them from the first. They should have probably been sown from ground-hand-lights during the spring. In order to have Califfowers at the time you name the seed must be sown in September, the plants being wintered in a cold frame, hand-glasses being further provided for grow them until the heads are nearly ready for cutting. They may be cut in September in the middle counties without being grown under hand-lights, but not in late seasons like the present.

DESTROYING APHIDES ON MARSHAL NIEL ROSE (*A Subscriber*).—Bull 4 ozs. of quassia chips for fifteen minutes in a gallon of soft water, strain and add four more gallons of water and syringe your Rose. We think this will destroy the aphides without injuring the blooms. The "amy substance" which probably disappears when you have destroyed the insects, and especially if you apply liquid manure to the roots of the Rose.

GRAPES SCALDED (*Somerset*).—The scalding in your case was the result of the sudden outbreak of sun after a long period of dull weather. We think with the treatment you are giving the Vines that the injury will not extend, and that shading will not be necessary. Without knowing the size of the houses we cannot say whether your Vines are too heavily cropped or not. With the number you have left on they should not average more than a pound in weight.

SOIL FOR VINE BORDER (*J. W.*).—Good Grapes have been grown without the addition of bones in the border, yet we strongly recommend them. A good compost for Vines is the following:—The soil should be porous and moist, rich through, and with one or two shovels of rotten dung from an old pasture; if neither too sandy nor too heavy this alone would grow good Grapes. To ten barrowloads of this turf soil add two of broken oyster shells, old lime rubbish, or a mixture of the two, which is preferable; one of horse droppings, one of charcoal, and half a bushel of broken bones. Do not use any manure that is not dry or decayed wood, which might breed fungi, so destructive to living roots.

BLACK BEETLES, WORMS, AND CENTIPEDES (*Clock*).—Beetles are injurious to plants by devouring their foliage, especially that of plants in the seedling

state. Earth worms are also injurious to plants in pots; they choke the drainage and displace the soil. Centipedes often do harm to plants. The worms may be destroyed by flooding the pots with lime water. A strong solution of sulphuric acid will also be effective. For worms and centipedes, employ the clear lime water. The beetles and centipedes must be captured.

QUICKLIME FOR GARDEN (*Idem*).—It is not injurious if used when cool and in a freshly elaked or finely powdered state. A few applications at weekly intervals will free the ground from slugs, but it must be applied in the evening or early morning, best after rain.

SEA SAND FOR PLANTS—GALLIARIA HYBRIDA GRANDIFLORA SEED NOT GERANIUMS (*Idem*).—Sea sand is not good for mixing with the compost for plants. River sand is suitable, but silver sand is more generally used. The *Gaillardia* is not a hardy annual, but half-hardy, requiring to be sown in a hotbed in March. We should consider seed sown a month ago in a cold frame to have perished. Perhaps the "scant productions" are not weeds but plants of the same genus.

FRAGRANT ROSES (*S. K.*).—The following are twenty-four of the most fragrant of the Hybrid Perpetuals:—La France, Charles Lefevre, Louis Van Houtte, Alfred Colomb, Marie Baumann, Bessie Johnson, Rev. J. B. M. Camm, Abel Grand, Senateur Versee, Camille Bernardin, Madame Knorr, Pierre Notting, Richard Wallace, Madame Victor Verdier, Mlle. Marie Rivier, Jules Margolin, Ferdinand de Lesseps, Comtesse Gécile de Chabrilant, Francois Michelon, General Jacquemont, Duchess of Edinburgh, Xavier Gibbo, Duke of Edinburgh, Madame Fillion, Madame C. Joigneux, and John Hopper.

MARSHAL NIEL ROSE FOR CHRISTMAS (*A. H.*).—You will need to encourage growth now, so that it may be completed by the middle of July. Then keep the plant dry, but not so as to cause the foliage to flag, and after about six weeks of rest, when the plants are nearly ready to flower, water and apply manure. Growth should be cut away, which is all the pruning necessary; and moisture being given, the plants syringed twice a day, and water applied freely at the roots, alternating with weak liquid manure, fresh growth will be made, and if the wood be ripe every shoot will flower. Air should be freely given at all times, but the house must be kept at a temperature of 57 to 60° by night, and 5° higher by day from fire heat, and this with some air on, admitting air freely in mild weather, but allowing the temperature to rise to 65° or 75° from sun heat. We presume the plants are well established.

CUCUMBER BLOSSOM AND TENDRILS (*Idem*).—Unless seed he wanted the male flowers are of no use and may be removed, also the tendrils; but we do not think it is worth the trouble of having the plants maintained at the size of plant desirable before allowing to carry fruit is not material. A plant a yard high ought to show fruit, our ambition being to obtain fruit as soon as we can, and successively with the increase of growth. We stop every shoot, and expect to have fruit at every second or third leaf produced; and then we want them for table purposes, not for exhibition. If you want the latter you must allow more foliage and take less fruit.

TRICOLOR PELARGONIUMS LOOSING COLOUR (*Neerth*).—It is not uncommon for plants struck in a propagating house and grown-on in heat to lose colour when brought into a lower temperature. The cuttings should be struck in a temperature very little higher than that in which the plants have been grown, and then they may be gradually lowered to the temperature of 50° by successive progressive growth; whereas when the plants are grown in heat they receive a check when brought into a lower temperature, growth ceasing, and the colours go out because there is no new foliage produced. Another cause of want of colour is growing too rapidly in shade, whereas it is light that will give colour. A light which is not natural, and a temperature of 50° by artificial means is desirable until the close of May, after which a cold pit or frame is more suitable, air being admitted freely in wet weather when it is desirable to keep on the lights to ward off rains; and in bright weather a light shading should be given from powerful sun. In mild weather and in light the plants should be shaded with paper, but the plants must be protected from heavy rains. Be careful not to overwater, and avoid a too rich compost, a healthy root-action being essential to progressive growth, upon which depends the beauty of the plants.

STOPPING VINES (*O. E. J.*).—You may stop the shoots when they reach the top of the house, and subsequently the side laterals to within two leaves of the main root. Post (one-third) is a useful addition to loam for Fuchsia, but it is not required by Geraniums unless the loam is very strong.

INSECTS ON CUCUMBERS (*A Fifteen-years Subscriber*).—The least sent was quite withered, and we could not find any insects. As fumigating kills them we can only advise you to persevere, and we think you will conquer the pest. We should syringe also with a mixture of soft-soap water or Gishurst, 2 ozs. to each gallon of water, and apply it twice a day, and afterwards wash and rub with clear water afterwards. You will find also that syringing with perfectly clear soft water will be beneficial to the plants and distasteful to the insects.

GRAPES SCALDED (*E. P. X.*, and *Others*).—The result is principally due to the burning influence of the sun suddenly following a long period of dull weather. The injury may be somewhat less extensive if the plants are not so heavily cropped. The injury may be more extensive when the sap is insufficient to supply the loss caused by evaporation. Grapes vary in the strength of their tissue, hence some sorts scald more than others, as, for instance, Muscats and Lady Downe's Seedling. Scalding is accelerated by keeping the vices closed too long in the morning and in the afternoon, and by opening the ventilators widely to check the rising temperature. Affording adequate nourishment to the roots, admitting air very early, increasing it gradually in advance of the rising temperature, and sprinkling a little whitening over the glass where the Vines are affected, are the means to adopt to prevent the injury from the spreading. We think you should have placed a sheet of paper to be laid on all night—just an inch or so at the top of the houses.

NAMES OF PLANTS (*C. Hacking*).—We cannot undertake to name plants that are not in bloom, the one that came so crushed it could not be identified. You should enclose specimens in a box. (*Maria*).—Probably a young plant of *Cystopteris fragilis*. (*Constant Reader*).—2, *Nithurpa europaea*; 3, *Neprolepis exaltata*; 4, *Rivina humilis*; 5, *Utricularia*; 6, *Ficus muscosa*. The first is *Pyrus pinnatifida*, and is probably a seedling of the water and shore-bud *Fear Subscriber*. We cannot undertake to name garden varieties of florist flowers, nor flowers of shrubs such as *Rhododendrons* and *Loses*. (*Elm*).—1, *Chelidonium monophyllum*, an unusually scaly form; 2, *C. hirta*; 3, *Tradescantia zehriana*. (*W. W. A.*).—The climber is *Lonicera*, *h. arvensis*, *L. xylosteum*, *L. periclymenum*. (*W. W. A.*).—The climber is *J. H. Howard*.—The blooms of the *Pelargoniums* were all shed. We do not undertake to name florist flowers. (*H. F. C.*).—*Acer creticum*. (*A. Dumbell*).—It is a *Thalictrum*, and we think *T. medium*, but cannot be certain without

—seeing a portion of the stem. (E. D. Day).—*Crataegus coccinea*. (Somerset).
—1, *Acer pseudo-platanus*; 2, *Acer pseudo-platanus variegata*; 3, *Ornithogalum umbellatum*; 4, *Clematis montana*.

POULTRY, BEE, AND PIGEON CHRONICLE.

**BATH AND WEST OF ENGLAND SOCIETY'S
POULTRY SHOW.**

CENTENARY MEETING AT BATH.

(Continued from page 431)

As we left the show ground last week we met one of the principal poultry stewards, and were delighted to hear from him that there is a possibility of the show next year opening on the Wednesday instead of on the Monday. To poultry exhibitors this will be a great boon, if not to all those in other branches of the Exhibition, for it was sad to see how the light-coloured birds had lost so much of their purity of feather after the Saturday travelling and the Sunday confinement. We also hear that the next Exhibition will probably be for single birds in the hen classes; if so, then will pass away the last Exhibition which has clung to the practice of pairs of hens. Doubtless single birds will bring more entries and be preferred by the main body of exhibitors. As we left the show ground and made our way to the station we passed over the bridge which but a few hours afterwards caused such dire consternation and terrible fatality to so many persons who had come up from distant homes to be present at this centenary meeting. It was on the hundredth anniversary of the Association is remembered from this terrible accident, which brought desolation on many families and marred the pleasure of hundreds more.

Before returning to our criticisms on the remaining classes we must state how the eight pens of Cochins (Buff, Black, and White) came to be isolated by themselves on the first day of the Show, quite away from their brethren, and without card or honour in spite of their excellent quality. They belonged to Mr. Alfred Darby of Little Ness, Shrewsbury, and were by him duly entered in proper time with the amount of the entry fees. It appears that his letter and its contents failed to come to Mr. Goodwin's hands, and consequently there was no place for the birds in the catalogue or pens prepared for them when they made their appearance on the Saturday evening, and so they were thus shown *hors de combat*. It is true Mr. Darby never received the labels, but then how many are there who have at some time or other failed to receive their labels in time who, however, knowing their entries had been duly made, have sent on the birds to the Secretary's charge, when they have been properly penned? It has happened to ourselves over and over again as it has to Mr. Darby; and he thinking this but one more instance of such irregularity—conscious, too, that he had entered the birds and paid the fees, he sent on the birds with the tireome result as described above. It was unusually vexatious to him, for the birds would have won high honours, two of them being the first Banbury White Cochin cock and the cup Buff hen at the same show; in fact, we should not have been surprised to have found three of the silver cups awarded to these birds. Of the varieties which we omitted from want of time to mention last week the

Hamburghs come first. The entries were not large, but the quality was very fair. In Golden-spangles each class had but five entries. The first was a good cock, though a little pink in lobes. The first pair of hens were well marked, and the plumage very sheeny. In Silver-spangled cocks the first-prize cock had good lobes (Rawley), but the second, perhaps, was the best in colour. To the Silver-spangled hena (Beldon) the cup was awarded—a grand pen, one bird especially well marked, and the bloom on both was very beautiful; here again there were only five entries. In Golden-pencils we liked the winner. He was good in colour, and had capital comb and lobes. The second was a showy bird in appearance, but too brown in tail; in fact, many of the feathers were all bronzed over. Of hens there were but three entries, where the first pair well deserved their place. The cup for cocks was awarded to the first Silver-pencilled cock (Rawley), so "master and man" each took home a piece of plate. The cup bird had a charming tail, and was in fine feather. The hens were few again, and of fair merit. The first were well pencilled and clear in colour (Rawley), while Mr. Beldon's second-prize pen were very much the same style of birds.

Game had six classes and forty entries. The cup for cocks was awarded to Mr. Matthew's Brown Red cock; he was in fine condition and of very bright colour, while the cup hen (Dutton) was a splendid Black Red; she was prettily marked and had a long head, though her appearance was slightly marred by her comb, which was rather too much sprung; her carriage and shape were excellent. The first Black Red cock (Matthew), perhaps, ran the same owner's Brown Red close for the cup, as he was of beautiful shape and had a good head. In the Variety classes of Game a Duckwing won in cocks (Stagg); a fairly

stylish bird of good colour. Second also went to a Duckwing (Matthew), as too did first in hens to a moderate pair of birds (Thomas). On the whole the Game were good classes, though the very hot day did not cause them to show to advantage.

The Variety collections formed two very large and interesting classes. In cocks first went to a most lovely Black Hamburgh (Serjantson), beautiful in bloom, and with fine sickles, comb, and feet. Second went to a very large Malay (Lecher), but he was in very bad feather and had bare legs, patches, his back and thighs. There was an Indian Game cockerel in pen 258 (Dutton) in good feather, and bred from a really imported hen by a Montrose cock. Pen 256 (Stephens) had a La Flèche cock, large, but now grown coarse and ugly in head. The pairs of hens were excellent, and Minorcas were in great force. The first prize went to a fair pair of Whites shown by Miss North-coke, while second went to Mr. Aspin's Black Cochins, who may feel thankful Mr. Darby's were out of competition. 271 (Boiesier) were a very highly commended pen of Black Hamburghs, very neat in comb and in fair condition. There were other good Black Hamburghs and a fair pair of Sultans.

Aylesbury Ducks were only four pens in number, the cup pen large and good in bills. The Rouens were one pen less, and were of no great merit, being rather out of feather. In the Variety class a fair pen of Mandarins were first, and Black East Indians second (Browne late Sainsbury).

Turkeys were excellent. We believe they were weighed. In cocks the older first than the second was first; the latter, however, of grand bone, and quite a chicken as his legs and head showed. In hens the first was a grand bird and belonged to the same exhibitor as the second-prize cock (Mr. Wyke). This hen was very massive in shape and good in feather. Second also good, but not so large as the winner. *Geese* with two pens made Mrs. Radclyffe an easy winner in poor competition.

In *Bantams* the cup went to a pen of Silver-laced (Serjantson), beautiful in markings, though we fancied them just a trifle large in body. This exhibitor seems to win with every breed he takes in hand. In Black or White Bantams a charming pair of Blacks were first, in beautiful bloom and condition. Second also went to good Blacks of lustrous colour (Ludlow & Rackham). Mrs. Holmes had a good pen of Black-bodied, only they were rather large. In Game Bantams moderate Black Reds were first and Snowy Reds second. Pen 328 (Anns), were an excellent pen of Black Reds. In single Bantam cocks a good Black Red won first (Anns), but there were only five pens in the class, and beyond the nothing of very striking merit. This latter class of single Bantam cocks of all breeds we fail to see the use of, as the money would be better expended in a class for another variety.

This ends the report of the Bath centenary meeting, and we hope at Oxford in 1878 to find the one hundred and first Show as successful in every way with the new classification and the other needed arrangements.—W.

The following are the awards:—

POULTRY.—*Swains-Cock*.—Cup and 2, E. Jones. *Hens*.—1, Miss E. Brown. 2, R. James. *Dorings*.—*Gold*.—Cock—1, Mrs. Black Red. 2, T. Burns. *Hens*.—1, O. Cresswell. 2, Mrs. Goldsley. *Silver-Dry-Cock*.—1, O. E. Cresswell. 2, T. C. Burnell. *M*.—1, T. Moore. 2, W. Perry. *White or Blue-Cock*.—1, O. E. Cresswell. 2, Mrs. H. J. Bailey. *Hens*.—Cup and 2, O. E. Cresswell. *Cochins*.—*Buff-Cock*.—Cup, H. Tomlinson. 2, Miss J. Milward. *Hens*.—1, H. Tomlinson. 2, W. P. Ryland. *Brown and Partridge-feathered-Cock*.—1, R. P. Percival. 2, T. Aspdon. *Hens*.—1, R. P. Percival. 2, Mrs. Radclyffe. *White-Cock*.—1, R. P. Percival. 2, Mrs. J. T. Holmes. *Hens*.—1, G. Forster. 2, E. A. Boiesier. *Brahmas*.—*Dark-Cock*.—Cup, J. E. Smith. 2, D. Lane. *Hens*.—Cup, J. E. Smith. 2, H. Lingwood. *Light-Cock*.—1, F. E. Jones. 2, R. P. Percival. *Hens*.—1, H. Lingwood. *Game*.—*Black Red-Cock*.—1, S. Matthew. 2, T. D. B. Rawline. *Hens*.—Cup, Hon. and Rev. F. Dutton. 2, W. J. Pope. *Brown Red-Cock*.—Cup, 2, D. Lane. *Hens*.—1, H. Beldon. 2, J. Jackson. *Hens*.—1, W. Oliver. 2, H. Beldon. *Silver-spangled-Cock*.—1, C. Rawley. 2, H. Festel. *Hens*.—1, H. Beldon. 2, H. Feast. *Golden-pencilled-Cock*.—1, J. Rawley. 2, A. F. O. How. *Hens*.—1, W. L. Ball. 2, J. Rawley. *Silver-pencilled-Cock*.—Cup, J. Rawley. *White-Cock*.—Cup, Rev. W. J. Collyer. 2, H. Beldon. *Hens*.—Cup, H. Beldon. 2, C. Woodworth. *Houdans*.—Cup, 1, W. Hamlyn. 2, D. Lane. *Hens*.—1, S. W. Thomas. 2, W. Hamlyn. *Crested-Cocks*.—Cock—1, H. Beldon. 2, Miss J. E. Feast. 2, Miss J. Stinson. *ANY OTHER VARIETY*.—Cock. 1, Rev. W. Serjantson. 2, T. Lecher. *Hens*.—Miss S. H. Northcote. 2, T. Aspdon. *Ducks*.—*White Aylesbury*.—Cup and 2, J. Heddes. *Hens*.—1, Mrs. Radclyffe. *Geese*.—Cup and 2, H. Yardley. 2, Miss E. Brown. *Turkeys*.—Cock. 1, H. J. Ginnell. 2, W. Wykes. *Hens*.—1, W. Wykes. 2, Rev. N. J. Ridley. *Geese*.—1, Mrs. Radclyffe. 2, C. E. Pennington. *Pigeons*.—*White*.—Cup, Rev. W. J. Collyer. 2, J. W. G. Ginnell. 2, L. H. H. Yardley. *White*.—1, L. G. Morrill. 2, Ludlow & Rackham. *Game*.—1, E. Morgan. 2, E. Martin. *Single-Cock*.—1, T. W. Aons. 2, T. P. Phelps.

Pigeons.—*Carriers*.—Cock. 1, H. Yardley. 2, R. Fulton. *Hens*.—Cup and 2, R. Fulton. *Pouter*.—Cock. 1 and 2, R. Fulton. *Hens*.—1 and 2, R. Fulton. *ROCKS*.—1, A. Miles. 2, H. Yardley. *DRACOONS*.—1 and 2, C. A. J. Pearson. *PASTALS*.—1 and 2, Rev. W. Serjantson. *TRUMPETERS*.—1, R. Fulton. 2, J. James. *ANY OTHER VARIETY*.—Cock. 1, G. Jones. 2, G. M. Nicholson. *Hens*.—1, H. J. Jones. *ARCHANGELS*.—1, H. W. Webb. *TURBOTS*.—1, C. Persons. 2, W. R. Rootes. *Hens*.—1, A. Allen. *TEMPLES*.—1, H. Yardley. 2, S. R. Rogers. *NUSS*.—1, C. Persons. *OWLS*.—2, J. J. Ginnell. 2, J. W. Ginnell. *ANY OTHER VARIETY*.—1, H. Yardley. 2, C. Persons.

JUDES.—*Poultry*: Mr. E. Hewitt. *Pigeons*: Mr. Harriett Weir.

POULTRY-KEEPING.—A third edition of "How to Succeed in Poultry-keeping for Profit or Exhibition, by G. W. Bacon," is

just published. In the Appendix is an epitome of the chief contents to facilitate reference.

A NEW HEN COOP.

I HAVE endeavoured to construct a hen coop which would effectually shelter young chickens from the cold and wet. The ordinary hen coops are useless for outdoor chicken-rearing; the rain driving in at the front of them thoroughly drenches the hen and chickens, and in very heavy showers the wet runs in at the bottom. In this coop these disadvantages are avoided, and with it no shed is required. It protects the chickens from wind when shut up, and at the same time allows them plenty of ventilation. The roof projecting over the front keeps out the rain, whilst a raised board placed under the coop (and which should always be covered with dry sand or ashes) keeps the chickens out of the wet.

It is made from wood three-quarters of an inch thick. Fig. 63 shows the front side of the coop; it is 2 feet long and 18 inches

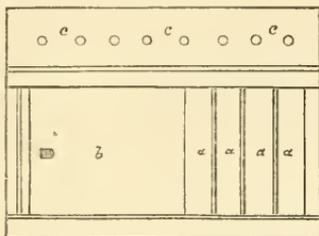


Fig. 63.

high. *a a a a* are the apertures through which the chickens pass, the openings being 12 inches high, 2½ wide, and are divided by thin iron rods a quarter of an inch in diameter, the middle rod being loose, and when pushed up permits the hen passing in and out; *b* is the slide which closes the apertures at night; *c c c c* are holes for ventilation three-quarters of an inch across: these being under the eaves the chickens are not exposed to cold winds, yet they always have plenty of ventilation.

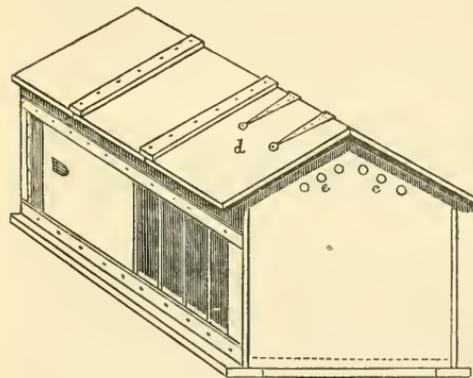


Fig. 64.

Fig. 64 shows the coop with raised floor placed underneath. *d* is the door, which forms part of the front side of the roof. The roof projects over about an inch at each end and 3 inches at the sides. The end is 24 inches high at the highest point and 21 inches wide. *c c c c* are ventilating holes, which should only be made at one end, thereby avoiding draughts.—W. SMITH, JUN., Easthorpe, Bottesford, Notts.

THE ALEXANDRA PALACE POULTRY SHOW.

FROM the peculiar circumstances in which the directors of the above building were placed last year no show of poultry was within their power, but a new company has since been formed, and the second Exhibition is proposed to be held on October 16th, 17th, and 18th. It will be entirely for chickens, and will, we hope, be as successful as on the last occasion. There will be a rule in the schedule to the following effect: that all exhibitors

discovered trying to obtain a prize by any dishonourable or fraudulent means will be disqualified and forfeit all other prizes they may have won. This should at least act as a preventive to trimming; showing old birds for young, or, in Pigeons, cocks for hens. In making this rule the authorities will have done their part, but we do hope the Judges will be very careful. It would be a grievous wrong with this new rule if they disqualified wrongly, as has been done, and quite as unjust to others if they fail to disqualify because of any uncertainty when the case really deserved exposure, as has been also done. In a case where any real doubt or uncertainty exists a parliament of fanciers chosen from those present would be a good thing, who would be able to confer with the Judge, and so not throw all the onus on him. The birds will be admitted on Monday, judged, and the Show opened the following day, closing on Thursday. They will be dispatched the same evening, reaching their homes on Friday. The Honorary Secretary is Mr. W. J. Nicholls, who will be glad to hear from any person who is wishful to advance any particular variety by providing money for prizes or a cup. We hope he will gain outside support, for we hear the promoters have not been met verily by the Palace Company. Within a few days after this Exhibition will come the old-established and popular Oxford meeting; but we do not think either Society will wish each other anything but success, and we hope both Secretaries will co-operate where necessary, as on a former occasion, so that in spite of the close proximity of dates they may both be well supported and deserve the great fame and prestige which they have hitherto enjoyed. To return, however, to the Alexandra Palace; for their Show to be the success they deserve and wish for, not only must they make their classes as palatable as possible to all, but we hope to find that the name of each Judge with his classes will be published, that double baskets will be in use, and above all that the promoters will set an example to the other metropolitan shows by placing on each class the prize cards as soon as the awards are made. Neglect of this at the Crystal Palace and the Aquarium has caused much disappointment to far distant or busily-employed fanciers, who only come up for the day and frequently have to leave utterly ignorant of the awards in very many classes.—W.

PICKINGS FROM AN AMERICAN POULTRY PAPER.

I HAVE somewhere read, where I know not, that an American was talking to an Englishman, and in friendly converse the former remarked, "One thing is, you Britishers don't speak the English language properly." A smile of incredulity was seen passing over the Englishman's face. The American perceived it, and added as explanatory, "You see you speak English with an English accent." The explanation was more odd than the remark. If the English language can be spoken correctly it must be surely in England—in its home, and an educated Englishman has no accent at all. I have always held that there is a most enjoyable, and piquant, and pleasing difference in American English and our own, and also in American ways and our own. Thus American ways of advertising and our own differ, and very amusingly too. Before me lies a recent copy of an American poultry paper, and a very excellent one it is, paper and copy. Some of the gems I must quote for the amusement and profit of our readers. First comes a piece of poetry as a heading to the exchange and mart portion of the paper:—

"THE TWO MERCHANTS.

"When trade grew slack and notes fell due
The merchant's face grew long and blue;
His dreams were troubled through the night
With sheaf's balliffs all in sight.
At least his wife unto him said,
'Arise at once, get out of bed,
And say those words unto all men:—
My goods I wish to sell to you,
And to your wives and children too;
My prices they shall be so low
That each will buy before they go.'
He did as his good wife advised,
And in the papers advertised.
Crowds came and bought of all he had,
His notes were paid, his dreams made glad,
And he will tell you to this day
How well did printer's ink repay.
The other in a piece as tight,
Contented was the press to sight,
And did not let the people know
Of what he had or where to go.
His drafts fell due and were not paid,
A levy on his goods was made;
The store was closed until the sale,
And for some time he was in jail.
A bankrupt now without a cent,
At leisure he can deep repent
That he was foolish and unwise,
And did not heed the advertisement."

Who will say this is not both amusing and instructive? Let me now turn to extraordinary advertisements themselves.

For the benefit of our lady and non-political readers generally, it must be explained that of the two gentlemen who were recently candidates for the highest office in the United States, that of President, one was named Tilden, the other Hayes. A clever advertiser thus utilizes the names to attract attention:—

"TILDEN OR HAYES, either one seems eggs from premium stock. Hondas, Sultans, Brahmas, Cochins, W. C. Black, Golden, and White Polish; White and Brown Leghorns; S. S. Hamburgs; B. B. Red Game Danants, &c."

It would never, I am sure, enter into the heads even of our shrewdest Yorkshire dealers to connect the names of Lord Beaconsfield and Mr. Gladstone with — eggs, so much a dozen. It reminds one of the story of the Mohomedan order:—"In the name of the Prophet — eggs." But yet another gem. A gentleman who ought to be a rival to old Parr as to age, and in whose existence the world is deeply interested, at least that portion of it who want to buy eggs, inserts his advertisement as follows:—

"I STILL LIVE and sell eggs for hatching from two yards of choice Light Brahmas; also Dark Brahmas eggs direct from the Sharpless yards, acknowledged by good judges to be one of the best strains of Dark Brahmas in this country. Prices, per sitting of 18, \$3.00, carefully packed."

I can only hope the gentleman for his own, and we will hope his country's good, will yet live longer and—advertise.

The extreme ignorance and utter want of education in people who do not advertise is thus hinted at:—

"The man who don't advertise has his store hung round with shingles and pieces of barrel heads, inscribed with lampblack, "Irish Ferreters," "Korn Meel," "Flower," "All kinds of botany produce," "Eskicos and Kandies for sail here." He says, "There aren't no ovens in newspaper advertising so long as a man is smart enough to tend to his own business and kin stand at the door and hallow the fellers in."

One more extract, as amusing as its predecessors, though the word "bulldozing" is a puzzler:—

"AN HONEST COUNT! NO BULLDOZING OR INTIMIDATION! 'Live and let live' is our plan! We have, therefore, concluded to reduce the price of eggs from our first-class stock of honeycomb in saleable form, from two dollars per sitting of fifteen. We guarantee our stock to be first-class, and second to none in America! Satisfaction guaranteed, as we will not under any circumstances have the name of having one dissatisfied customer. Send for price list to —."

These extracts from our clever cousins across the Atlantic will provoke a smile in sober England.—WILTSHIRE RECTON.

IMPROVEMENT IN APARIAN KNOWLEDGE.

No. 5.

Among the most notable improvements which have been made in the profitable management of hives of late years should be mentioned the production of honeycomb in saleable form by means of supers small in size and easily removed; for, be it observed, there is "honey and honey," and enormous is the difference between the ordinary, or even the best, run honey of commerce and the delicious sweetmeat sealed up in the newly made comb by the bees themselves. The one compared with the other is "like Hyperion to a satyr;" and as the object of every bee-master should be quality at a high price rather than cheap and vulgar quantity, it is of importance that he should study the best method of attaining the former profitable excellence.

A year or two ago I urged in these columns the adoption of the American plan of sectional supers, or at least a modification of it suitable to our climate. I do not suppose that it would generally answer in England to cover our hives with the multitude of tiny supers which envelope an American stock like the brooms and baskets of our travelling "cheap jacks" (I think they have often as many as thirty of them), but the principle is a sound one, and a modification of it quite within our experience. At this moment I have a splendid stock fully at work in a sectional super which I procured from the Brothers Abbott. I think this super somewhat too low and narrow, although its capability of extension lengthwise is admirable, and limited only by the length of the crowboard of the hive. As I am using it, it consists of four sections, each section respectively being 7 inches long inside measurement, 4 inches high, and 4 inches wide; the whole four, therefore, will be 16 inches long. I should have preferred each section to be 9 or 10 inches long and 5 or 6 inches high. Each terminal section has a pane of glass let into one side of it. With this exception all is open from end to end, and thus, however numerous the sections in use at one time may be, the whole fit together practically as one super.

It will be seen that this arrangement secures a combination of the English and American plans of supering. It is better than the former because of the power it gives for partial deprivation at any time, as well as because it can be enlarged or contracted to suit the wants of the hive, whether before or after swarming, or whether in the height or at the wane of the honey-gathering season. I am glad to observe that your old and valued correspondent, "D. Deal," endorses fully the estimate I have formed as to the excellence of this principle of supering, which is new to English bee-keepers.

In a recent Journal (May 17th) Mr. Hunter approves of the

sectional supers used by a Mr. Root of Ohio, which are four-sided—i.e., closed-in on all four sides. This to my mind is an objection. Bees like to work in an open space more or less roomy, and will often decline working in small supers where they cannot mass themselves. Such, doubtless, is not the case in America, where the climate in summer is hotter and less variable than in this country. This means we have to strike here, us and the sectionals of the Americans. It seems to me that the Messrs. Abbott's are the nearest approach to the supers required here. Each of the sections is supplied with two lines of wax in grooves: thus each will hold two combs, which if well filled and sealed up should weigh nearly 2 lbs. of honeycomb. I cannot but hope that the exhibitions of all the aparian societies in England will be well supplied with these sectional supers in the coming autumn, and that they will introduce a new era in the marketing of honey. At least twice the quantity of honeycomb would be sold at remunerative prices in comparison of that which now changes hands everywhere.

These sectional supers are very easily removed or added, whether full or empty. You have only to insert two pieces of glass between the sections which are to be removed, also a piece of zinc or glass may be slipped under the section which is to be removed. After removal another section can be put in its place directly and the slip of glass removed. These sectionals have the merit of cheapness, as they can be procured for 2s. 6d. per dozen, or they could be manufactured at home by anyone who knew how to use a few tools adroitly. These sectional supers will, I feel certain, supersede everything of the kind hitherto in use. The marvel is that they have not been invented sooner.—B. & W.

DO BEES REMOVE HONEY?

I PLACE on record the following circumstance, which considerably puzzled me last year, with a view to invite the observation of my fellow bee-keepers during the present season on the point in question.

At the end of last July I was watching the progress of a super which a strong stock was finishing off with great rapidity; but what baffled me was where the bees could procure the honey from, the harvest, according to my knowledge of the neighbourhood, being over.

Seeing that honey was still being stored in this super I did not remove my other supers which did not afford facilities for observation. I also advised a neighbour to return an incomplete super, as, judging from my observatory super, the harvest was not at an end. My observatory super, being completed, I removed it and replaced it by another three parts finished; but storing now ceased. I then proceeded to remove my other supers, but to my surprise these had been partly consumed. It was the same also with my neighbour's. Here was to my mind a problem to be solved—viz., How was it that whilst others were emptying one was storing up? I was beaten. Thanks to our Journal light presently dawned. Not long after I there read Mr. Pettigrew's statement that bees do remove honey above from below. I was convinced that this was the only explanation of the circumstance in question.

If any of your readers can give a more satisfactory explanation, or will make observations this season with that end in view and record their experiences, they will oblige—O. B.

FOUL BROOD.

ANOTHER dozen years ago I was the possessor of fifteen or twenty stocks of bees doing fairly well, when I made an unlucky purchase at Windsor of a whole apiary of twenty stocks in all sorts of hives, that had at one time belonged to the Rev. Mr. Cotton, whose bees had died in them of foul brood. The infection had remained with the hives, and, of course, came to me. At that time I was inexperienced in bee-keeping and knew not what was troubling me, but it will be sufficient to say I lost all my bees; still for some years I kept the hives and re-stocked them, but prosperity never came, and eventually when I arrived to more knowledge of bees and their ailments I destroyed the lot. Still each year foul brood in one hive or more never failed to make its appearance, but by constant and timely supervision I was enabled to excise the diseased combs, and so for the time eradicate the plague before the stock was harmed, until I began to laugh at foul brood in my hives, the combs of which were all constantly under my view, and where a few foul cells were sure to be detected without delay. So little did I fear it that I voluntarily more than once bought diseased stocks, trusting to my skill that no harm should come of them. Vain trust! My first trouble last year was with my queen rearing in nucleus boxes. Scores of queens advanced as far as the sealed larva state, but there they died; not one in a dozen hatched, and my experimental queen-raising was consequently a failure. The stocks, however, last summer were healthy until September, when some Hungarian brood became very bad, and I destroyed their combs, adding the bees to a neighbouring colony. Then one

stock after another became sick, and I determined after exciting the diseased combs to try the new German remedy, salicylic acid, which Hilbert and other continental apianians say is a specific. Their instructions are that a solution of the acid should be made and the combs and bees sprayed or sprinkled with it. This I did with a negative result. Again, I cut out the bad combs, and having made a painful of the solution stopped the remainder of it and washed the inside of all the hives. This was apparently successful, and by stimulative feeding breeding was actively set up and a good many young bees hatched before winter. Two hives of bees I bought at the bee show at the Alexandra Palace were also slightly affected with foul brood, and they having undergone the same process became immensely strong both in bees and brood. In January I examined the whole of the stocks, and although some were weak I saw nothing more of the disease then; but within another month it made its re-appearance. The knife and the salicylic acid were again brought into use, but they were useless. Although the disease might be stayed, the germs were left only to germinate on the first favourable opportunity. The whole of my fifteen stocks became affected, and the matter became serious. Few larvae ever arrived at maturity, and as the spring advanced the bees died naturally of old age, until I found myself in the middle of May left with four Ligurian queens and about half a pint of bees between them!

Thus I have learnt that there is foul brood and foul brood, the one may be comparatively harmless, the other most virulent. I have also learnt that salicylic acid is not the specific it is vaunted. I spared no trouble or expense in my effort to effect a cure; few bee-keepers could have given more attention than I did, and it was useless. All my beautiful straight worker combs, nearly two hundred, have been consigned to the melting-pot, the frames destroyed as well as bee litter about the place, the hives scalded, washed twice with carbolic acid, once with salicylic acid, and painted three times, and now June 1st, I have made a fresh start with two purchased swarms. For the last month I have felt like a fish out of water, and as if a good stinging would do me good.

I am strongly inclined to think that the virulent disease came to me from Italy with some of the Ligurian queens I have been in the habit of importing, and was not my old acquaintance which I have of late years always felt myself able to combat. I am convinced that much of the ill-success in bee-keeping is caused by the unknown presence of foul brood in the hives, and the same hives being used again and again the disease is propagated both at home and abroad, and I believe that as yet the only remedy is to stamp it out like we do the cattle plague. Had my hives been of an inexpensive character I would have burnt the lot, and although I have taken every precaution to disinfect, I am not sure that I am acting wisely in not making my loss a total one. Time will show.—JOHN HUNTER, *Eaton Rise, Ealing.*

OUR LETTER BOX.

SELLING POULTRY (*Jane*).—We are unable to answer your question. EGGS UNFERTILE (*Constant Subscriber*).—The reason that has been assigned as the cause of many of your eggs failing is not a sufficient one. If it had any foundation its effects would have been as perceptible in the early part of the season as now. Eggs are never as fertile at the end of the season as at the beginning; in this, we expect, the true cause of the falling-off. The size of the cocks has nothing to do with it. The Bantam cock can do no harm.

GAPES IN FOWLS (*Smallwood*).—The gapes are always caused by the presence of red worms at the root of the windpipe. When they first come they are very small (not larger than a thread) and have a very bright, almost a vermilion colour. We have, however, taken them out of a half-grown chicken as large as almost to fill the windpipe half of its length. They are very active, and it is the tickling caused by their constant motion that causes the short dry cough and the gaping in the futile endeavour to get rid of the pests. It is a disease of youth, and attacks adults as seldom as the whooping cough does old people. The original treatment was to introduce a feather into the windpipe, to turn it round very fast, and to withdraw it suddenly. Worries, but not all of them, were found entangled in the feather. Another method was to dip a feather in turpentine oil and pass it down. Another to pass down horse-hair loops, twist them, and withdraw them. None of these were effectual, because they always left some worms behind, and they increase with the windpipe. It could only be done by using something sufficiently powerful to pervade the system, and to reach by its odour both the seat and the cause of the disease. Nothing was found to do it so effectually as camphor. That which is given to a fowl at a frequent must of necessity remain some time in the crop in order to neighbourhood to the windpipe. As soon as the odour reaches the worms they die, and the disease ceases with their death. Wherever premonitory symptoms are observed immediate action should be taken. They may often be arrested by giving the birds no other water to drink than that which is strongly impregnated with camphor, known to your grandmothers as "camphor julep," and believed to be a panacea for most disorders, and, more than that, a preventive. We speak from experience. It will cure the gapes in fowls and Pheasants.

FEEDING CHICKENS (*W. H. W.*).—As they are six weeks old they may give them barley meal mashed, and oat grits.

BLACK POLANDS (*Idem*).—Black with white topknots.—Plumage, in both sexes, uniform glossy black, with the topknot white, the feathers at the base of the tuff in front alone excepted, which are black: the less of these the better;

but we have never seen a bird of this variety honestly possessed of a wholly white topknot. The topknot of the cock to face regularly backwards, and partially on the side, but not so much as to intercept the sight; that of the hen to be firm, globular, and even. Form: comb of the cock minute, consisting of two horns or spikes, which are still smaller in the hen; wattles large, and brilliant in colour. Head concealed in a great measure by the crest, but rounded on the skull; eye prominent; body deep and full, the breast being very protuberant; carriage erect and active. These last points refer to both sexes. Legs short, clear, and of a dark slate colour. Weight of the adult cock not less than 5 lbs., nor of the hen than 4 lbs.

FEEDING RABBITS (*Small Boy*).—If your does were careful and thrifty we should say a quart of a pint of oats would do for each, with bran and green food. Mandarins is good food, so are carrot tops and grass. In spite of every contrivance Rabbits waste half their dry food. We always give ours oats mixed with clover chaff. We also give them water twice per day. Owing to the waste, large breeding does require half a pint per day.

SWARM STRAYING (*A Part Subscriber*).—Your question is a difficult one to answer, but we fear you can have no claim to your bees that have "gone into a neighbour's hive previously occupied by bees," even though you "followed and seen" it to do this. If your neighbour is a man open to a fair representation, and there is no question on either side as to the alleged fact, he ought we think to make you some compensation, varying from 10s. to 15s., according to the size of the swarm. More you cannot expect.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.		IN THE DAY.						Rain.	
	Hygrometer.		Direction of Wind.		Temp. of Air.		Shade Temperature.			Radiation Temperature.
1877.	Baromet. in Sea Level.	Dry.	Wet.		Temp. of 1 Foot.	Max.	Min.	In sun.	On grass.	In air.
We. 6	30.006	deg. 56.1	deg. 52.1		deg. 56.3	deg. 65.0	deg. 47.9	115.3	41.7	0.04
Th. 7	30.015	59.7	52.0	S.W.	59.7	67.7	44.7	114.3	42.2	—
Fri. 8	31.135	68.9	54.1	S.	66.2	75.2	45.8	124.0	43.9	—
Sat. 9	30.097	65.3	59.6	W.	58.6	76.2	46.8	123.2	47.4	—
Sun. 10	31.123	65.8	60.8	W.	60.8	76.2	46.8	123.2	47.4	—
Mo. 11	31.101	67.9	61.6	N.E.	64.2	80.6	53.2	110.4	46.1	0.210
Tu. 12	29.856	66.9	64.6	E.	62.4	77.5	57.8	112.1	57.4	—
Means	30.076	64.8	67.8		68.9	75.8	61.7	118.6	46.0	0.288

REMARKS.

- 6th.—Rather dull morning, and generally overcast throughout the day; rain began about 5.30 P.M., and lasted until 9 P.M., when the sky cleared.
- 7th.—Fine throughout; the range of temperature rather greater than yesterday.
- 8th.—Slight haze in morning, but on the whole a fine warm day, but with a good deal of cloud.
- 9th.—Very warm sun sunny day.
- 10th.—Another very warm and fine summer day.
- 11th.—Hot and sultry, no wind; thunderstorm in S.E. and S.W. 9 P.M. to midnight; slight rain from 10 to 11, and drizzle till 11.30.
- 12th.—Very warm in the early morning, but the rest of the day cloudy and hazy.

A week of warm summer weather. The average temperature at 9 A.M. has risen more than 6° between each of the last two weeks. For that ending May 29th it was 54°, June 6th 59.1°, and June 12th 64.8°.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 18.

A FAIR amount of business doing, with a better supply of hot-house fruits. English Pines in demand. The first home-grown Peas have arrived during the week.

FRUIT.

	s. d.	s. d.		s. d.	s. d.		
Apples.....	1	0	0	Melons.....	each 3 0 to 8 0		
Apricots.....	1	0	0	Nectarines.....	dozen 15 0 to 20 0		
Astoria.....	1	0	0	Oranges.....	per 100 10 0 to 16 0		
Chestnuts.....	bushel	0	0	Peaches.....	dozen 8 0 to 10 0		
Currants.....	1	0	0	Pears, kitchen.....	dozen 0 0 to 0 0		
Black.....	bushel	0	0	desert.....	dozen 0 0 to 0 0		
Figs.....	dozen	6	0	Pine Apples.....	lb. 2 0 to 5 0		
Fiberia.....	lb.	0	0	Pines.....	1	0	0
Golds.....	bushel	1	0	Plum.....	dozen 0 0 to 0 0		
Gooseberries.....	quart	4	0	Raspberries.....	doz. 18 0 to 20 0		
Grapes,hot-house.....	lb.	2	0	Strawberries.....	lb. 3 0 to 10 0		
Lemons.....	per 100	6	0	Walnuts.....	bushel 5 0 to 8 0		
				ditto.....	per 100 0 0 to 0 0		

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	dozen	8 0	0	Mushrooms.....	pottle 1 0 to 2 0
Asparagus.....	per 100	8 0	0	Mustard & Cress.....	punnet 0 2 0 to 4 0
Beans, Kidney.....	per 100	1 0	0	Onions.....	bushel 0 0 to 0 0
Beet, Red.....	dozen	1 0	0	Peasling.....	quart 4 0 to 6 0
Broccoli.....	bushel	0 2 0	0	Peasley.....	doz. bushel 2 0 to 0 0
Cabbage.....	dozen	1 0	0	Parsnips.....	dozen 0 0 to 0 0
Carrots.....	bunch	0 6 0	0	Peas.....	quart 0 0 to 0 0
Cauliflower.....	bunch	1 0 0	0	Peas, new.....	lb. bushel 2 0 to 4 0
Celery.....	per 100	1 6 0	0	Kidney.....	bushel 8 0 to 0 0
Cauliflowers.....	dozen	2 0 0	0	New.....	lb. 0 0 to 0 0
new.....	dozen	0 0 0	0	Round.....	bushel 1 0 to 1 0
Celery.....	bundle	1 6 0	0	Fubar.....	bundle 0 6 to 1 0
Colerworts.....	bunch	2 0 0	0	Salsify.....	bushel 0 0 to 0 0
Carummers.....	each	0 6 0	0	Spinnage.....	quart 0 0 to 0 0
Endive.....	bunch	1 0 0	0	Seakale.....	basket 0 0 to 0 0
Fennel.....	bunch	0 8 0	0	Shallots.....	lb. 2 0 to 0 0
new.....	lb.	0 6 0	0	Spinage.....	bushel 0 0 to 0 0
Herbs.....	bunch	0 2 0	0	Turnips.....	bunch 0 0 to 0 0
Lettuce.....	bunch	1 0 0	0	new.....	bunch 0 0 to 0 0
Leeks.....	bunch	0 4 0	0	Veig, Marrows.....	each 0 0 to 0 0

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 21—27, 1877.	Average Temperature near London.			Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	h. m.	h. m.	h. m.	h. m.	Days.	m. s.	
21	Th	Royal Society at 8.30 P.M. Linnean Society at 8 P.M.	74.4	48.8	61.2	3 45	8 18	4 31	0 31	10	1 31	172
22	F	Quekett Microscopical Society at 8 P.M.	73.6	47.1	59.9	3 45	8 18	5 51	0 50	11	1 43	173
23	S	Royal Bot. Soc. at 3.45 P.M. Crystal Palace Rose Show.	72.7	45.9	61.5	3 45	8 19	7 6	1 16	12	1 55	174
24	Scn	4 SUNDAY AFTER TRINITY.	74.1	49.1	61.1	3 45	8 19	8 10	1 52	13	2 8	175
25	M		73.0	49.2	61.1	3 46	8 19	9 0	2 40	14	2 21	176
26	Tr	Exeter Rose Show.	74.3	49.2	61.7	3 46	8 19	9 35	3 42	15	2 33	177
27	W	Burton-on-Trent and Spalding Shows.	72.8	48.2	60.5	3 47	8 19	10 0	4 42	16	2 46	178

From observations taken near London during forty-three years, the average day temperature of the week is 73.5°; and its night temperature 48.6°.

SUMMER WORK IN THE FLOWER GARDEN.



N the last day of May we finished planting our flower garden, and I daresay all your readers both in early and late districts will have finished by the time this appears in print. Bedding-out time is always a buoy period, especially where there is much of it to do; and although the heaviest of the work may be done then, there are still many matters requiring attending to, both shortly after the plants are planted and onwards throughout the whole of the season. Immediately after planting the whole of the beds should be run through with a Dutch hoe to level the soil, and at the same time remove all stones and rubbish with the hand, which gives the ground a tidy appearance until it is covered by the plants. This is how we did our beds, and they were hoed again the other day because the surface was beginning to look close again after a splendid rain. With the rain, and particularly the hoeing, the plants appeared to have made great progress in one night, and as the soil is now open and the plants in a free growing state we shall concern ourselves no more about either watering or hoeing, unless the latter be to kill weeds, and then I prefer pulling them up with the hand.

But perhaps everyone may not have been so fortunate in having rain, and in that case something else must be done. When the beds are very dry and the plants at a standstill for want of water, begin to overcome this by hoeing all the beds and leave them very rough. Do this in the forenoon, and in the afternoon give them a thorough and complete watering. I use these two words where one might do in ordinary subjects to give an impression of the great importance of a perfect watering, because if the beds are not made as wet as they would be with ten hours' constant rain the time and labour spent in watering had much better be applied to something else. After attending to this in the evening, next morning run the hoe through the surface and leave it all neat, as the surface will not need to be disturbed again, because one watering given in this way will make the plants grow through a month of dry weather, and then, come what may after that time, the plants will stand it without any artificial assistance.

Plants, especially Geraniums, which have been planted before they were thoroughly hardened, generally lose their lowermost leaves. These must be picked-off as they decay, as they are very unsightly. Verbenas, Tropæolums, Petunias, and many other straggling-growing plants are very liable to be broken or injured by the wind after they are more than 6 inches in length, and to prevent this they must be pegged to the ground, and in doing this arrange the shoots so as to cover as much of the soil as possible. Tall-growing plants must be staked according to their height of growth. I know some places where Geraniums, Calceolarias, Stocks, &c., have all to be staked, or they would be blown out by the roots: and where this is the case all this should be done when they

are planted, or very shortly afterwards. I always prefer pegging to pinching. The latter I never practise unless to keep a plant in its place.

Where herbaceous plants are growing in the flower garden staking and tying must be attended to weekly throughout the season, and let the flowers be cut from every plant as soon as they decay. It is wonderful the effect this has on the appearance of many plants. I have seen many Geraniums which seemed entirely past blooming, but when the dead top of the trusses were clipped away the buds underneath opened with all their original beauty. When the beds have a thorough overhauling in the way of cutting off dead flowers and removing withered leaves the surface of the soil must always be hoed afterwards. Throughout the whole of the summer-bedding season cleaning and keeping clean must be the order of the day. If the beds are on grass let that be cut frequently; if on gravel, then raking and rolling must be regularly done. Never let a weed be seen near a flower, nor an edge become rough. About the beginning of August when the autumn propagation commences the flower beds are often considerably damaged in appearance for some time, especially if the plants have not grown much and have to be cut hard-in. To avoid this as far as possible take all cuttings off with care, and trim both plants and beds as the cuttings are taken off.

In carpet beds where miniature designs are wrought out, attention must be frequently paid to pinching the different plants to prevent them from covering one another, and also to keep them from growing tall to lose their effect. In the latter part of September and throughout October no exertion should be wanting to keep everything fresh and clean in appearance, as in many instances it is at this time that the flower garden is most desired to be gay.—A FLOWER GARDENER.

FRUIT TREE CULTURE.

VARIOUS articles of great value have recently appeared in the Journal on this important subject. "W. G." has written from Kent, "W. C." from Yorkshire, and Mr. Abbey, also I presume from the north, have each conveyed welcome instruction. These writers all appear to be in favour of dwarf trees; while Mr. Robson, on the other hand, has borne testimony to the greater usefulness of standards for producing "tons of fruit" for the markets. The law in reference to the planting of fruit trees has also been alluded to in an able article by a Gloucestershire correspondent. That the law, as at present established, has a deterrent effect on fruit culture, few, I think, can deny; and I fear, too, that the legal impediments will continue to exist since other questions more "pressing" are likely to absorb the attention of our legislators for some time to come, and most of them in the meantime can obtain plenty of fruit.

One of your correspondents has suggested that tenants may well plant fruit trees since they cost but little, and when worked on precocious stocks, and well managed, they quickly arrive at a bearing state. It is true that

many tenants would do wisely to plant fruit trees as many have planted them and found the advantage of having done so; indeed were it not for the enterprise of the rent-paying portion of the community the supply of fruit would not be nearly equal to what it is at the present time. It is the tenants, as a rule, and not the landlords who have planted the trees which supply our markets with fruit: and yet the trees which the tenants have planted are the landlord's property, and for which, at the expiration of his term, the tenant has no claim for compensation, even though the trees, which may have cost him much, have yielded him nothing in return.

It is fortunate that, as a rule, English landlords are both just and considerate and rarely disturb a good tenant; but that is not a sufficient reason that there should be a law of tenant right for agriculturists and none under which planters of fruit trees can obtain compensation for the outlay which they have invested in trees—trees which they have to leave behind them, and which enhance the value of the freehold to which they belong.

"WILTSHIRE RECTOR" has taken a just view of the case, and arrived at the conclusion that as the trees become the property of the landlord the landlord should plant the trees. If they cost but little to the tenant their cost is certainly not greater to the landlord, while they add much to the value of a home, however large or small it may be. In country districts where tenants have planted trees their holdings are regarded almost with envious feelings by their neighbours, and when a vacancy occurs of such holdings there is no difficulty in letting them at an increased rental. This fact is becoming more and more acknowledged, which is a great advantage, for the evil of the scarcity of fruit trees will be the more likely to cure itself. Landlords are more disposed to plant a reasonable number of fruit trees in the gardens of cottages and others than was formerly the case. This is a hopeful sign. Fruit trees improve the freehold, and hence benefit the landlord; they also certainly benefit the tenant and make him more home-loving and contented.

An instance not long ago came under my notice of the benefit which a landlord received from his tenant—a cottager—having planted a good collection of Apple trees. The tenant died, and the holding was vacant. Applications were made for the holding, and double the original rent would have been gladly paid for the home, but the landlord preferred to let it at the old rent and reserve that portion of the garden containing the trees to his own use. These trees produce more useful fruit than do the private garden and orchard of the landlord, who is lord of the manor, and employs a gardener and half a dozen assistants. The man who planted the trees lived long enough to have received the reward of his enterprise—the fruits of his labour, and the landlord neither did him nor no one else any wrong in the course which he adopted; but had the landlord in the first instance planted the trees—they would not have cost him £5—he would have had a moral as well as a legal claim on the trees which are yet so valuable to him. An instance like the one quoted proves the great value of fruit trees and of the advisability, if not the obligation, of landlords planting them, charging, of course, if they choose, interest on the capital they have invested. Several landlords, as I have before observed, do provide a reasonable number of fruit trees for the gardens of their tenants, and many others would no doubt do so if they could see their way clearly as to the right kinds of trees to plant and the best varieties.

On this point I submit that when a landlord plants a tree in the garden of his tenant his object is to plant a permanent and an useful tree—not an experimental and fancy tree. The trees which are the most permanent and useful, I hold with Mr. Robson, are orchard standards. They only require to be well planted, securely staked, and they will bear immense quantities of useful fruit without either summer pinching or winter pruning. These are the class of trees, I submit, which should be planted by landlords; and if any tenant has a fancy for pyramids and is able to manage them, I think it is not too much to expect that he should plant them himself. They may be the more profitable trees, or they may not: that is not the question. They are artistic trees, while the standards are natural trees. None can deny the usefulness of a fruitful standard tree which nearly manages itself; but there are many who are unable to keep a pyramid tree in a satisfactory condition.

A few standard Apple trees of such kinds as Keswick Codlin, Domino (the fruit of Lord Suffield is often blown off standards),

Hawthornden, Stirling Castle, Beauty of Kent, and Dunselow's Seedling; and of such Plums as Rivera's Royal Prolific, Victoria, and Gisborne's planted by landlords in the gardens of their tenants could not fail to be of great value, and would afford satisfaction alike to those who planted them and those gathering the fruit.

As summer is the best time for the discussion of such important matters as the planting of fruit trees I allude to the subject now, trusting that it may receive consideration before the time for planting arrives. Too often the considering part of the question has to be done when the time for action has arrived—that is, consideration begins at the wrong end of the season. I ask that thought may be given to the subject now. I think it was Nelson who attributed his success to having always been "a quarter of an hour before his time." I trust, therefore, that my remarks are not premature.—A NORTHERN GARDENER.

SOME HARDY PLANTS RAISED FROM SEED.

FASHION, ever fickle and capricious, may spurn what are not novel, tender, or scarce, but it does not follow that hardy plants are wanting in beauty. The great merit of hardy plants is their being at the command of a majority of cultivators. Tender plants are of no use to those who cannot command glass structures wherein to grow or protect them from the rigour of our climate; hence the claim of hardy plants upon the attention of those with means only for growing such. But fashion, it is said, like a prodigal return, and certainly of late years there has been more favour shown than formerly to old-fashioned plants. Some of them, it must be said, have not been entirely neglected, but, on the contrary, they have been brought to greater perfection.

There are few plants which will bear comparison for quaint beauty with a mass of Columbine in early summer, the flowers of *Aquilegia caryophylloides* being beautifully striped, the variety of striped and mottled flowers being a study; and a mass of the double varieties in mixture is superb, and the single very singular. There is, of course, some very fine species of *Aquilegia* which are grand, but I now allude to the common Columbine, which will grow in any open situation and in free soil. It will do admirably in the open spaces of shrubberies, and spring up among shrubs, by the side of woodland walks, on rough stony slopes and hedgebanks, yet no one who has seen them in variety would care to be without a mass of Columbine in the garden. I will notice a few other useful plants which ought not to be forgotten at this period of the year.

Rose Campion (*Agrostemma coronaria*).—Showy and useful is the least that can be said of this old-fashioned plant, the flowers being deep pink or rosy purple, and varieties with white centres and white with rose centres, some being a near approach upon crimson. The Double Crimson is the only double one that is cultivated. The single varieties are, however, very showy and useful for cutting. Any light soil suits them.

Campanula Bells.—Still favourites, now coming to the front, and deservedly so, for when well grown no border plants surpass them. But a bed or mass is what tells; and as to variety, we have blue, white, and rose or pink, and double forms of the two first, with acquisitions in the new varieties having the calyx of the same colour as the corolla both in the blue and white flowers. These (*Campanula Medium calycanthema* and var. *alba*) are very distinct and beautiful. Then in *Campanulas* there is the very beautiful *C. lactiflora*, white, flowers in branched panicles; *C. bellidifolia*, with a branching pyramid-like spike of violet or blue-purple flowers; and *C. pyramidalis*, blue, and its var. *alba*. All stately plants, fine for borders, and desirable when grown in pots, in which, under good cultivation, they attain 6 feet in height.

Indian Pink.—The great diversity of colour, combined with brilliancy, peculiarly fit them for display in a mass. The colours range from white to the deepest crimson, rayed and blotched variously, and a bed of them is charming. There is no need to single out varieties, all are beautiful, and ought to have a place in every garden. The double kinds ought also to be grown. They grow about a foot high, and should have a well-drained soil and sheltered situation.

Foxglove.—Found in every hedge! What if they are? Are they not beautiful? Even the common varieties are better than none at all, and yet there is no need for them, we having such a variety of spotted and large flowers very little inferior to those of *Gloxinias*; in fact we have *Gloxinia-Foxgloves*

(*Digitalis gloxinioidea*) in variety. They are fine for borders or open spaces in shrubberies, thriving well in Rhododendron beds and in woodlands, being partial to light vegetable soil, and will grow in partial shade.

French Honey-suckle.—The red and white forms are seldom seen. They are very pretty, and like a warm sunny situation and light soil, deep but free from stagnant water. The flowers are both attractive and fragrant.

Rocket.—Sweet, early summer flowering, in lilac and white varieties. Very useful for borders, preferring rich light soil.

Male Pink (*Dianthus hybridus*) is simply superb, its lively rosy crimson flowers being very beautiful. It is known as Brown's Male Pink.

Sweet Scabious.—These are having a return to favour. No flowers are finer for cutting, and the dwarf varieties are superb. They should be grown by everyone. They like a light soil and warm sunny situation.

Stocks (July flower, or Stock Gilliflower).—Everybody knows Brompton Stocks, yet it is remarkable that so few grow them. A mass of them in early summer is very beautiful, but the Giant Cape is more continuous-flowering and larger in all its parts, being had in white, purple, and scarlet colours, and is nevertheless a Brompton. Queen Stocks have "gone out;" their fine branching habit, profuse flowering, and large double flowers ought to have been sufficient to retain them.

Scarlet Lychnis (*Lychnis Chalcedonica*) has fine orange-scarlet heads of bloom, borne by bold-looking plants, having a striking effect in borders and shrubberies. There is a white variety.

Snape-dragon (*Antirrhinum majus* var.).—A mass of Snapdragons is very beautiful in early and mid-summer. The plants continue a long time in flower, are indeed very showy, and ought to be extensively cultivated. The colours of the flowers are very varied, some being extremely delicate and others very rich.

Honesty, purple and white; very gay during the late spring or early summer months. The seed vessels are semi-transparent, and when dried are useful for winter bouquets.

Sweet William.—This is one of the few old-fashioned plants that come to us in improved guise. The Auricula-eyed variety is a decided advance. Those, with the double varieties, must supersede the old forms.

Wallflower is another of the old-fashioned plants always prized for its fragrances, and one much improved alike in the single and double varieties.

The easy mode of raising and growing these plants ought to win for them extended culture. The seed should be sown about this time (early June) in light moderately rich soil in rows rather thinly; the rows need only be 3 or 4 inches apart. The seeds varying in size will need to be covered with fine soil according to their size, it sufficing if covered about the diameter of the seeds or a little more, watering as required so as to bring the seedlings up quickly. When large enough to handle they should be pricked-off 3 inches apart in rows 6 inches asunder, and in these they may stand until autumn or spring, when they should be planted out. I would suggest that, a good bed having been secured for the garden, any spare plants be planted in shrubberies and in any open spaces by the sides of woodland walks; in fact, where there is space for a weed dig it up and plant a flower.—G. ABBEY.

SPRINKLING WATER IN HOTHOUSES.

Your correspondent, Mr. Taylor, states (page 375) that the effects of sprinkling the inside surfaces of hothouses on dry days, with the ventilators wide open, is "to lower the temperature, and almost certainly to make the atmosphere drier by evaporation." May I tell him that if he will test the matter by the aid of a hygrometer (a dry and wet bulb thermometer) he will find he is entirely mistaken as regards evaporation? The direct effect of sprinkling the floors, &c., is to saturate the atmosphere of the house and make the dry and wet bulbs approximate. And why is this? Because evaporation and radiation from the wet bulb is reduced, and its temperature rises, while in the dry bulb it falls. What takes place on the bulb of the thermometer takes place also on the leaves of the plants—the strain upon them is reduced. Hence it follows that sprinkling the floors on bright days is beneficial, for it cools the air, reduces evaporation, lessens the necessity of admitting great draughts of dry air (which is very undesirable, particularly after dull weather), and thereby prevents scorching or flagging, to an injurious extent at least. This was

pointed out to me long ago by one of the best known Grape-growers and authors on Vine culture of the present day, and I have since found it to be quite correct in practice, though I do not find sprinkling with the above object necessary, except when the foliage is tender and dull weather is suddenly followed by hot and bright sunshine.

Anyone may make a hygrometer in a few minutes by tying a piece of soft muslin round the bulb of a common thermometer, and keeping it constantly moist by means of a piece of cotton wick and a phial of water. If this is hung up beside a dry thermometer the difference between the two will indicate the dryness of the air and the evaporation that is going on. The greatest disparity I ever recorded between the dry and wet bulbs outdoors in the shade was 14° on a dry April day, while in the vineries, freely ventilated and sprinkled, less than half that figure was registered.

Mr. Taylor says, "Sprinkle as much as you like as soon as the house is closed." He may rest assured that the difference between sprinkling an open and a closed house is only one of degree, so long as he does not damp the foliage in the former case, as he would then be turning the leaves into evaporative surfaces as well, and chilling would then be the result, similar to what one experiences when he dips his finger in ether and then exposes it to the dry air.—J. S.

OLD ROSES.

I WILL endeavour to come up to the scratch as requested by the "PARSON'S GARDENER," although I think I have always done so in my letters to the Journal, and that the last charge that can be brought against me is that I do not speak my mind.

The "PARSON'S GARDENER" asks me to tell him the reason why Roses like Paul Perras and June, which do so splendidly in pots, should be despised in the open garden. I suppose that the coachman to whom the "PARSON'S GARDENER" alludes would scarcely put his large cart horses, excellent in every way though they may be, into the barouches in which he drives his young ladies out. He reserves Boxer for the plough and another suitable employment. So, many Roses which are excellent for garden decoration or pots are quite out of place in the exhibition box. I know that the two Roses named are splendid Roses for pots, but I can safely say that during the years I have exhibited Roses I have never seen either exhibited even in a nurseryman's seventy-two. And why? Because so many other Roses of the same colour, and of the same excellent qualities as to growth and habit, so far excel them in form that it is useless to place them in the stand unless when very hard driven for the last two or three Roses. The nurserymen almost in despair may out one of these, but, as I said before, I never knew one do so.

Your correspondent looks upon the Rose from such a very different aspect to what I do that we can never agree. I look upon it solely as the finest exhibition flower that we have. He regards it as, I suppose, the finest flower for garden decoration. I do not want numbers of blooms on my trees; three or four at the outside is all I want my plants to bear. He, on the other hand, wishes for hundreds, aye, thousands of blooms, that he can cut and come again and again and still find numbers of blooms of some sort. Both these views as to the value of the Rose are excellent, and I do not in the least dissent from your correspondent's view if he will let me hold mine.

Our Journal circulates among all kinds of Rose-growers, and in all probability the great majority of your readers will agree with him and not with me, so by all means let him go on and recommend garden Roses, Roses such as he says will give thousands of blooms for hospitals and festivals, and if I can possibly find room I will buy some next autumn and try them once more. But what I contend is—and I do not think the "PARSON'S GARDENER" will dissent from this, but he may, or at least his coachman will—that Paul Perras, June, Chêne-d'Or, &c., are not exhibition flowers, and that persons who buy them hoping to combine free blooming with exhibition properties will find that they have made a great mistake.—JOHN B. M. CAMM.

THE SETTING OF GRAPES.

SEVERAL some controversy as to the varieties of Grapes getting I have forwads by train a small box, carriage paid, containing a bunch of Mrs. Pince's Muscat Grape, if you consider it

deserving of notice. The said bunch is one of seven that was at first left on a Vine plant-d 12th of March, 1876. Before flowering I further reduced them to four, and now to two. The Vine was simply thinned out with a ball and planted in the centre of the inside border for fruiting last year, but then, I suppose not having fire heat, it did not set any fruit. If there be any secret worth knowing, it is plenty of water, plenty of liquor, plenty of foliage, and an occasional rub-down with a camel-hair brush.—JOSEPH WITHERSPOON.

[We never saw a bunch of Grapes more perfectly set than the one referred to by our correspondent, nor a finer and more healthy leaf of Mrs. Pince's Muscat than the one accompanying it.—Eds.]

SEAKALE.

No doubt your correspondent "B. G." (who detailed his practice on page 378) has had much experience in the cultivation of this useful vegetable, but perhaps land in his district may not be quite so valuable as it is in the suburbs of London. "B. G." may depend on growers for the London markets making the very best of their land. I have lately had some conversation with one of the most successful growers of Seakale near London—namely, Mr. Bagley, Munster Farm, Fulham, who is a grower of from ten to twelve acres of Kale annually, which is mostly cleared off once a year. Sometimes they leave an acre or two for more than one year, but this does not occur frequently. They never force old plants or crowns in the market grounds. The Kale is earthed or "landed," as I previously mentioned for late spring use. As to the time involved in washing the Kale, I can say that I have seen some of the finest produce that has ever been sent into the kitchen taken from the beds without a scratch on it, and bleached with nothing but the soil in which it was grown. I think if your correspondent saw a load of this Kale he would say that it was a noble sight to grace the market.

I may mention that the London market growers avoid taking sets from old plants. They always secure the quantity they require from the one-year-old roots. I have seen them planting sets not much thicker than the stem of a tobacco pipe, which often produces the best crowns. I have just been through a fine piece of Seakale about four acres in extent, which had been "sprouted" and looked remarkably well. What I mean by sprouting is removing the weakest breaks or shoots and leaving the strongest one to form the future crown. This is a very important point in Seakale culture to be attended to at the present time. In conclusion I must certainly adhere to the annual clearance system of growing Seakale.—J. P. M.

DRESSING CARNATIONS.

I HAVE seen "D. Deal's," note on dressing Carnations, particularly the one where he refers to his taking days to dress a stand of twenty-four Carnations and Picotees. Does he mean dressing or making? Upon looking back and taking a bird's-eye view of my experience I find that the average time occupied by myself and other growers superior to me is ten minutes per flower, including carding, setting-up, &c. Of course there are individual flowers which take a longer time; but, again, there are those which take less.

As to the quantity of petals a flower should contain, I myself am not particular as to the number provided they are good. In my opinion it matters little whether a flower is shown with three, four, or five tiers of petals, as there is always room for a large full flower in a back row, even if it lacks a little refinement, for being placed further from the eye faults are not so easily discernible. There are, however, now very few, if any, flowers, which if well grown lack refinement, although they may make a large flower. Jenny Lind, c.n. (Puxley), is a type of the large full flowers. It being late prevents it from being exhibited as often as it otherwise would be; but when caught the exclamation is, "How fine!" What premiers it has won! but now, alas! in some seasons the ground colour is hardly so pure as it should be. My friend Mr. B. Simonite has let us have one in similar style, only earlier, and I am greatly mistaken if we do not have a really good variety and one that will take a lead in its class for years to come. Its name is John Simonite.

My object in writing this is to prove that we northern growers do not object to large full flowers provided that the individual parts are good; and it invariably happens now that any flower we may complain of in the north is equally complained of in

the south. Again, some flowers grow differently in different localities, according as the season may be. The year before last I grew Mars, s. n.; had I gone by that season's growth I should have discarded it, as it had no white with me at all. Last season, however, it was beautiful, and I think it will take the lead in its class.

I am afraid that "D. Deal," has not had sufficient experience of the Carnation to constitute him a teacher. Does he not dress other flowers? Then why not dress a Carnation?

The process of dressing is very simple, and in my opinion not at all opposed to any principle in horticulture. Let "D. Deal," procure a set of dressing instruments from my friend Ben Simonite, and let the merest tyro try his hand at dressing a flower, and if his hand is a steady one he will make some improvement in the flower. There is first the camel-hair brush for brushing off the dust, &c. Is this opposed to any principle? Then there are the steel tweezers for turning back the points of the calyx, which in some varieties are very long and stiff. Lastly, there are the finely-tempered ivory tweezers for arranging the petals, which are easily displaced by strong winds, or may come with the colours not evenly distributed—that is, with more flake or bizarre on one side than on the other. From my situation, if not allowed to dress the flowers, I should never be able to exhibit, as in the first place I have always in dry weather a cloud of smoke and dust falling on my plants, and if a wind blows the flowers are frequently blown off and the petals always disarranged.

If "D. Deal," will pay a visit to Yorkshire in our blooming time I shall be most happy (he being judge and jury) to dress a flower or flowers in his presence, and I have not the least doubt that he will go away convinced that dressing is not only proper, but that he will go and do likewise.—GEORGE RIDD, *Undercliffe, Bradford.*

FERTILISERS.

WE all know how advantageous it is to have the use of some artificial manures, as they are somewhat improperly called, to push forward and strengthen our garden crops, and most of us know that they ought to be applied only during wet weather, and that they are really thrown away and wasted if put on the ground during dry and droughty weather. Many of us could tell how often we have lost the benefit our gardens would have derived by a sudden change of weather. Often have I sprinkled guano, nitrate of soda, &c., when there was every appearance of rain, only to be disappointed by the weather clearing up. I therefore beg to suggest that your able correspondent, who wrote last week on this very important subject, "Top-dressing—Fertilisers," will favour us with the information of the proper proportions of guano, superphosphate of lime, nitrate of soda, soot, and salt, &c., to be mixed or dissolved in water; say how many pounds or ounces should be mixed in ten gallons of water, how many square yards of ground that quantity should be applied to, and what crops will beneficially absorb the ten gallons of mixture. I intentionally ask for the quantities in pounds and ounces per ten gallons of water because measures vary very much in different parts of the country, and strong manures require to be most carefully administered, for they are powerful for good or evil as rightly or wrongly used; and I therefore think that instead of trusting them to the chances of a light or heavy fall of rain, the best and most advantageous way of using them will be dissolved or mixed in proper proportions with water.—G. O. S.

THE RAMBLING NOISSETTE ROSE.

THE Rambling Noisette is not much known. It was found in a bed of seedlings made in 1825 by Marie Noisette, a nurseryman at Briec-Comte-Robert, and flowered for the first time in 1829. It is a variety with long shoots, attaining 10 to 12 feet long, rambling on the surface of the ground like the shoots of a Bramble. Its flowers are double, of a clear milk white, of medium size, and exhaling an odour suggestive of that of the Musk Rose, and produced in a corymb of five to twenty, issuing from the wood of the preceding year.

"I had grafted some on Briars 12 feet high," says Marie Noisette; "their drooping branches supported by a hoop presented an agreeable aspect. In fact, where these branches were covered with thousands of Roses they were splendid, an idea of the beauty of the flowers being suggested by recalling those of Aimée Vibert, the pearl of white Roses."

No rambling Rose is more beautiful than this. It is valuable

for covering bowers, arbours, rockwork, fences, garlands, &c. We repeat it is beautiful, more beautiful than a hundred others sent into commerce since, and it is surprising that a variety so meritorious should disappear from gardens.

It would be difficult now to procure the *Rambling Noisette Rose* (*Noisettiana repens*). The greatest amateurs do not possess it, nevertheless a plant of this excellent queen of flowers exists with M. Achille Aubry, Mayor of Coubert, where M. Cochet has lately discovered it. In a year the horticultural establishment of M. Cochet will be able to supply this variety to those who are desirous of possessing a beautiful and good Rose, very vigorous, long-lived, and acquiring an enormous growth.—(*Journal des Roses*.)

ROYAL HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW.—JUNE 19TH.

WHEN we remember how successful the previous shows of the Society have been during the present year, the Committee meetings which have grown into exhibitions, the spontaneous efforts made by the growers and exhibitors of plants for Covent Garden, and the united display subsequently made by those growers and the chief nurserymen on the occasion of Her Majesty's visit on May 2nd—when such a splendid example of horticultural loyalty was exemplified—it was not to be expected that on the occasion of the visit of the popular Prince and Princess of Wales that other than a rich, varied, and extensive display would be provided. As soon as it became known that their Royal Highnesses had signified their intention of affording the Society the benefit of their patronage, it was certain that efforts would be made both by the directorate and exhibitors to render the Show worthy of the occasion. The result has been proved, as it was certain to prove, that those efforts have been successful, for the exhibition on Tuesday was remarkable both for its extent and high quality.

It is noteworthy, particularly so, that during the whole of the exhibiting term the displays have been of what may be termed an honorary character; and that they have been sustained in that powerful way they have been is the greatest compliment that could have been paid to the old Society and its Council, and have proved in a signal manner the vitality of horticultural life even when its chief exponent was struggling with difficulties of a nature which many felt to be insurmountable. The season hitherto has been a season of success; it has been a success of unity, not of contest. The Exhibition afforded a striking instance of the resources of our principal nurserymen. At show after show they pour forth their treasures in all their freshness, fulness, and beauty. On this occasion they appeared to be in finer form than ever, and made a noble winding-up of the summer shows of the present year—a grand finish to a successful season; a success in upholding the influence of the Society and the object of it—the promotion of horticulture—rather than a success whereby one exhibitor has triumphed over another, or where the fight has been for immediate gain, where prizes have gone to a few and blanks to many.

That contested exhibitions have done much for British horticulture none can deny. They have perhaps done more than anything else to promote high culture; but the experiment, dictated, we presume, by circumstances and not adopted from choice, of uncontest exhibitions, has certainly proved that the issue has not been an issue of degeneration. Larger plants may have been staged than those exhibited at South Kensington this year, but plants of greater value, in greater variety, and in better condition have not been witnessed during recent years. Competition will come again, and it will be none the less enjoyable and ardent for the year of grace that has been afforded; and in the meantime it is satisfactory to find that the exhibitions have been so good; and it is also satisfactory—and this must be placed to the credit of the Society—that no one has exhibited worthily without having received a meed of recognition. It has been a year of medals not of money, and medals carry a value beyond their immediate and intrinsic worth. Medals were awarded on Tuesday, and well they were won. Let us now look in what manner and with what materials; first, however, giving a general idea of the character of the Exhibition.

The comprehensive nature of the Show may be gathered from the fact that the Society's schedule contained forty-nine classes—twenty-four for amateurs and twenty-five for nurserymen and the trade; the Pelargonium section twenty-four classes, and twelve prizes were offered by Mr. William Bull, for plants of his introduction, comprising as many silver cups—four of fifteen, four of ten, and four of six guineas in value, together with money prizes in two classes amounting to £11—in all seventy-seven classes. From the Council-room to the Exhibition the broad walk, about 160 yards long, had been covered with canvas,

making the approach delightfully cool preparatory to the still cooler reception which had been provided by Mr. Wills. The Pelargonium tent, 150 yards in length, was placed directly across the broad walk, and was entered from the north side immediately in the centre; and just at this point Mr. Wills had blended winter with summer—the tropical with the frigid zone, for a rugged pile of icebergs had been erected from the interstices of which were a few graceful Palms, just sufficient for affording relief to the glistening blocks of ice, and by contrast intensifying, as it were, its cool appearance. The arctic-torrid pile was further ornamented with Water Lilies fringed with fresh green plants of *Lysimachia Nummularia*, and supported at intervals above it in ornamental vases were brightly coloured plants of *Pandanus Veitchii*, with a base of *Lycopods* and *Isoetes gracilis*. In the centre was a large terra cotta fountain reaching nearly to the top of the tent. The vases, fountain, &c., were provided by Messrs. F. Rosher & Co., King's Road, Chelsea, London, and the ice employed exceeded six tons. It was a bold and skillfully arranged example of advanced decoration, and was particularly appropriate during the sultry and brilliant day.

The Pelargonium tent was 120 yards in length, and was filled from end to end with an excellent display of these plants and some extensive collections of Irises and Lilies.

The Fruit and Vegetable tent, which contained also table decorations, &c., was of nearly the same length as the Pelargonium marquee, and was at right angles with it, and was also quite filled. From the other end—the east end of the Pelargonium tent—a covered way conducted to the large marquee in which the principal collections were arranged. The reception was here again appropriately cool, for Messrs. Dick Radcliffe and Co. had erected a charmingly natural pile of artificial rock-work. The stones were carpeted with moss, and from the crevices sprang fresh green Ferns, *Begonias*, &c. Sprouting fountains sent jets of tiny spray from the base-like miniature springs, and from the top of the rock a gurgling stream of water poured into the pool below. The whole had a very refreshing effect. A short distance from the rockery and arranged in a semi-circular manner round it were a fine collection of Irises in pots from Messrs. Lane & Son, Berkhamstead, the plants being trained as pyramids. These afforded an effective background to the rockery. On either hand and affording colour were some fine collections of "market plants," the *Liliums* especially imparting a delicious odour. Having noticed the entrance we will take a momentary stand in the centre of the marquee. In the very centre where a group of plants were formerly arranged there was on this occasion a simple circle of smooth lawn, the plants being arranged on elevated turf-covered mounds sufficiently isolated to show their distinctness, and were rendered all the more bright and effective by the neutral centre, which also afforded additional room for purposes of promenade. The plan adopted was unquestionably the right one from whatever point of view it was regarded—whether for convenience or effect. The first group at the end was Mr. Williams's great collection. This was flanked on the one hand by a fine collection of *Cycads* and new plants from Mr. Bull, and on the other by the *Orchid* collection, brilliant boxes of Irises from Messrs. Veitch, also Japanese Acers, amongst which the distinct white *Hydrangea* Thomas Hogg showed conspicuously.

At the opposite end of the tent was arranged a group resembling a tropical forest, composed of immense Tree Ferns, large Palms, and towering *Cordylines*, the group being fringed with a bank of *Lycopods*, from which sprang bright flowering and foliage plants, with here and there elevated above them fine specimens of *Nepenthes*—a fine group, about which it is not necessary to say another word. It was flanked by a group of great variety and richness from Messrs. Veitch on the one hand, the opposite bank being crowded with fine specimens of Irises from Mr. Turner, Slough; the sides of the bank being occupied with Ferns and hardy flowers from Mr. Parker, Tooting, and a large and good miscellaneous collection of plants from Messrs. Rollison & Sons. Such is the general effect of the central portion of the Show. The opposite outer sides of the banks were excellently filled, as was the marginal border surrounding the marquee.

We may now look a little more in detail at some of the chief collections.

The collections of nurserymen and the trade were necessarily the more extensive and important features of the Show, consequently they first demand notice. The groups were unlimited as to the number of plants; space of a given extent having been appropriated to each exhibitor, which he occupied with plants of his own choice, and arranged them, of course, so as to best display their attractions. This mode of exhibiting undoubtedly possesses many advantages. According to the arbitrary stereotyped plan of specifying the plants an exhibitor must necessarily leave many specimens at home, which whether they are large or small are highly attractive; but by the plan here adopted opportunity was afforded for every plant of merit being arranged, and the combinations thus effected

afforded excellent lessons in grouping. The first class in the nurserymen's section of the schedule was for a group of miscellaneous plants in or out of flower. Many splendid groups were arranged, the largest perhaps, and composed of the largest plants, being from Mr. B. S. Williams. It occupied fully 100 square yards of space. At the back were large Palms, and in front of them specimen flowering and fine-foliated plants, the whole being fringed with smaller plants including some fine Orchids, especially *Odontoglossum vexillarium*, *Cattleyas*, and *Cypripediums*. There were a few Fitch-plants, also excellent *Heaths*, richly coloured *Pelargoniums* (Capt. Raikes) and many more Holloway treasures—a most imposing collection, and admirably arranged.

Messrs. Veitch's collection occupied less space, but not a less number of plants. The group was almost indescribably rich, and one over which hours might have been spent, and every moment have found something fresh to admire. In the centre of the group was a stately Tree Fern, at the front of which was a fine new *Alocasia thalictroides*; at the front of this again was the finest plant of *Nepenthes sanguinea* that has ever been exhibited. Another grand *Nepenthes* was *N. villosa* (Janata), *N. Hookeriana*, *N. Cheloni*, and *N. hybrida maculata* were also admirably exhibited. The group also included brilliant *Crotone*s, *Orchids*, choice Ferns, and a wonderful collection of insectivorous plants. A group of the latter elevated on a pedestal deservedly absorbed great attention, as also did an elevation of tiny *Orchids* at the opposite corner. A fine pan of *Utricularia montana* was charmingly conspicuous, and not less so was a specimen of *Odontoglossum novium* with nearly thirty spikes. The *Masdevallias* had also a very rich effect. It was an extremely valuable and artistically arranged group, quite worthy of the repute of the exhibitors.

Mr. Wille's striking group above mentioned was exhibited in this class. The collection of Messrs. Rollisson contained Palms, Ferns, *Dracenas*, brightened with *Lilium Szovizianum*, *Yucca filifera variegata*, *Orchids*, *Phloxes*, double *Pyrethrums*, and *Nertera depressa*. A good collection.

On the next mound Messrs. F. & A. Smith, Park Road, Dulwich, exhibited a lively group of flowering plants, Ferns, &c., which showed to great advantage near the fine first-prize collection of hardy Ferns from Mr. Stone, gardener to J. Walton, Esq., N. E. of Finchley, *Athyrium Filix-femina* (Fielding), *A. F. f. plumosum*, and *Davallia bullata* were very fine; Mr. Lev also exhibited well in the same class. Divided from those by Mr. Turner's splendid *Hollies* was the capital collection of hardy Ferns and flowers from Mr. Parker, which included collections of cut blooms of *Paeonies* and double *Pyrethrums*. We next came to an extensive and capital group of fine-foliated plants from Messrs. James Carter & Co., High Holborn, London, the effect of which was considerably enhanced by a marginal line of the charming low-growing hardy annual, *Ionopodium acule*. Some baskets of *Coleus Duke of Edinburgh*, surrounded with *Nertera depressa* and edged with *Ionopodium*, were admired in this group.

Following the walk, the back of the next central mound contained *Ericas*, stove and greenhouse plants, and *Orchids*. For *Ericas* Messrs. Jackson & Sons, Kingston-on-Thames, were awarded the first prize, a gold medal, for specimens which have been previously described. A gold medal was also awarded to the same exhibitors for a very fine group of flowering plants and Ferns. This collection contained a capital example of *Platyocentrum grande*, several *Orchids*, *Aphelaxes*, &c., also striking specimens of *Saxifraga napolensis*, the white dense pyramids of which were highly effective.

In the amateur *Orchid* classes the first prize was awarded to F. A. Philbrick, Esq., Avenue Road, Regent's Park; and the second to Mr. Perry, gardener to J. W. Miles, Esq., Shirehampton, Bristol, for well-bloomed specimens of medium size. Messrs. W. Cuthnall & Son, Highgate, exhibited a bright and healthy collection of medium-sized plants. *Hedera canariensis aurea* in this group was very effective. The other plants consisted of *Heaths*, *Aphelaxes*, and other hard-wooded plants and Palms.

Messrs. John Laing & Co., Forest Hill, arranged an extensive and varied collection of ornamental-foliated plants, such as *Pandanus*, Ferns, *Caladiums*, *Dracenas*, *Yuccas*, and well-coloured plants of *Bicolor Pelargoniums*. Of these *Exquisite*, The Earl, J. J. Weir, Mrs. H. Weir, Earl of Roslyn, and Mr. Hornam are an excellent half-dozen.

A very extensive and valuable group of new and ornamental plants were exhibited by Mr. Bull. The centre of the mound was occupied with remarkable *Cycads* and a few Palms, noteworthy amongst which were a fine plant of *Kentia Moorei*, and the only plant in Europe of *Pritchardia grandis*. In fine contrast with the above was the richly-marbled *Dracena Goldieana*, *Bomaria Cardieri*, several *Crotone*s and *Aralias*, *Regal Pelargoniums*, &c. *Marants Massangeana* was excellently shown, as also was *Bertolonia Van Houttei*; but a plant which absorbed much attention was the curious adhesive plant *Marcgraavia paratoxa*, which was self-adhered more closely on a deal board than could have been done by any manipulation; the leaves are dark green, cordate, about 1 inch broad and 5 inches long.

A splendid group of twelve fine-foliage plants were arranged by T. M. Shuttleworth, Esq., to which the first prize was deservedly awarded. *Dasylyrin gracilis* in this group was in perfect condition and was greatly admired; *Gleichenia semivivida* was about 7 feet in diameter, and *Croton undulatum* was nearly as large and in excellent colour, while *C. angustifolium* was still larger. *Dion edule* was very attractive, and *Cycas revoluta* and *Pandanus* were very large.

Mr. Wills exhibited an extensive collection of the *Anerley Dracenas* in admirable health and rich colour. *D. Voluta* appeared to be better than ever, as also did *D. Marginata*, *D. Willisi*, *D. Bausei*, and *D. Alexandræ*; while Mrs. Bause and Mrs. Wills arrested the attention of many visitors. Messrs. Hooper & Co., Covent Garden, arranged a choice collection of small Palms.

In the class for "Pelargoniums of any or all classes," Mr. James, gardener to W. F. Watson, Esq., Redless, was easily first with a very good display of well-grown show and fancy varieties; Mr. Lacy, gardener to C. S. Martineau, Esq., Wigmore Park, Dorking, having the second prize. At the same side of the marquee were collections of fine-foliated plants from Messrs. C. Lee & Son, Hammer-smith, and one still more extensive from Messrs. Osborn & Sons, Fulham, to which a silver medal was awarded. Messrs. Standish & Co., Ascot, exhibited *Filmy Ferns*; *Taxus fastigiata aurea*, very bright; and a group of well-flowered plants of the white *Carnation Miss Jolliffe*. For a group of Palms and *Cycads* the first prize was awarded to Mr. Wills for very good specimens.

We now come to the last, but not the least in effectiveness, of the collections in the large marquee—namely, the classes for decorative plants as grown for Covent Garden. Mr. Herbst, Kew Nursery, Richmond, was awarded a first prize for an admirable collection of Palms, the plants being perfectly clean and in the best of health. Some young plants of *Coccos Weddelliana* were extremely fresh and bright. A first prize was also deservedly awarded to Mr. J. Reeve, Acton, for a most effectively arranged group of admirably grown plants. The front row was composed of a rich blue *Lobelia*, the second of *Mignonette*, the third of *Rhodantea Mangleri*, *Kalosanthes coccinea*, double *Petunias*, and yellow *Calceolarias*; the fourth of *Adiantum cuneatum*, beyond which was a mixture of *Balsams*, *Fuchsias*, *Pelargoniums*, *Hydrangeas*, *Liliums*, &c., all in the best of condition—a most attractive group. The second prize was awarded to Mr. Savage, Hyde Nursery, Edmonton. The plants were arranged in rows from the walk up the bank; first a row of show *Pelargoniums*, then one of *Calceolarias*, next *Heliotropes*, followed with *Hydrangeas*, and again with *Calceolarias* and dark *Geraniums*. The bank was edged with blue *Lobelia*, and was very bright.

We next came to a collection arranged by Messrs. Pounce and Sons, 13, Westbourne Grove, but to which we could not find any card or notice attached. If this group was omitted by the Judges we do not hesitate saying that a mistake was made. It certainly met with a large share of approval from the visitors. The front row was formed with *Geraniums L'Elegante*, then 3 feet in width of the *Clond Grass*, *Agrostis pulchella*, in which the word "Welcome" was distinctly brought out in blue *Lobelia*; beyond this were two rows of flowering plants, then more grasses and more flowers until the top of the bank was reached. It had cost much labour in arrangement, and was, as many ladies observed, "really very pretty." Mr. Brown, florist, Hendon, exhibited groups of admirably grown plants of *Pelargoniums* and *Fuchsias*.

A very attractively arranged rustic basket was exhibited by Mr. Hepper, gardener to C. O. Ledward, Esq., The Elms, Acton. It was filled with *Pandanus*, *Caladiums*, and *Crotone*s round a central Palm, and edged with *Cissus discolor* and *Panicum variegatum*.

FRUIT AND VEGETABLES.

There was a very good display of fruit arranged along the side of the long tent, and all the collections shown were of excellent quality. In Class 21, for collections of fruit (amateurs), there were several exhibitors, the first prize falling to Mr. Miles, gardener to Lord Carington of Wycombe Abbey, Bucks. There were excellent *Pines*, *Foster's Seedling Grapes* not quite ripe, and *Black Hamburghs*, very fine; *Black Circassian* and *Eilton Cherries*; *Violette Hâtive Peaches*; *Cox's Golden Gem* and *Reid's Scarlet-Bush Melons*; and *Sir C. Napier Strawberries*. These were far in advance of the other collections. Second honours going to Mr. W. Cox, The Gardeau, Madresfield Court, Great Malvern. He had first-rate *Sir Charles Napier* and *British Queen Strawberries*, good *Queen Pine*, *Black* and *White Grapes*, *Peaches*, and *Melons*. The third award was given to Mr. Goodacre, gardener to the Earl of Harrington, Elyston Castle, for a collection of similar fruits to the others.

In Class 22, for single dishes of Grapes, *Pines*, *Strawberries*, *Peaches*, *Nectarines*, and *Melons*, or collections of any of these fruits, the first prize went to Mr. Coleman, gardener to Earl Somers, Easthor Castle, for a fine *Black Prince Pine*, *Victory of*

Bath Melons, Peaches, Nectarines, and Grapes. Second Mr. W. Bates, Pullet Lodge, Twickenham, for splendid Black and White Grapes, Queen Pines, &c. Third prize went to Mr. P. Edwards, gardener to Mrs. Tristram, Liphook, Hants, whose collection included good Muscats and Black Hamburg Grapes.

Class 47 (trade growers), for a basket of Black Grapes, some splendid-coloured Black Hamburgs with good bloom and finish and Sir C. Napier Strawberries were exhibited by Mr. R. Farrance, florist, Shadwell Heath, Essex. These were the best-coloured Grapes in the Show.

VEGETABLES.—In Class 23 (amateurs), for a collection of vegetables, there was fair lot shown. The first prize went to Mr. Miles for a capital display, including Veitch's Ashleaf Potatoes, excellent Asparagus, Tomatoes, Peas, Beans, Mushrooms, Carrots, Onions, Cucumbers, and Cauliflowers, in all twenty-four dishes. The second prize fell to Mr. Fragnell, gardener to G. Digby, Esq., Sherborne Castle, Dorset. These were good in quality and consisted of thirteen dishes. The third prize went to Mr. Iggleden, gardener to W. B. Baker, Esq., Orsett Hall, Essex, for a collection of twenty-four dishes.

In Class 49, for the trade growers, Mr. Harwood, St. Peter's Street, Colchester, took a first prize; he exhibited very fine Asparagus.

CUT FLOWERS AND PLANTS.

In the class, for vases, baskets, and bouquets of dried flowers, Messrs. Hooper & Co., Covent Garden, made a grand collection, taking up one end of the tent. Messrs. Ivery & Sons of Dorking came out well with about eighty kinds of hardy Ferns, for which they received a first prize. In the amateurs' class for a group of hardy herbaceous plants Mr. W. Roberts, gardener to W. Terry, Esq., Fulham, was first with fine and well-grown plants, including Campanulas, Lilliums, Paeonias, Pyrethrums, Delphiniums, &c. Mr. R. Dean of Ealing also exhibited a group of similar plants in flower, and had the first prize in the nurserymen's class. He also showed a splendid group of bedding plants, for which he received a first prize. Mr. Roberts was again first with a fine collection of bedding plants in pots; also for a box of cut blooms of Iries; and Mr. H. Hooper was awarded a first prize for a grand lot of cut flowers of Ranunculuses, Pansies, Paeonies, and Pyrethrums.

Roses were not plentiful, but were very good in quality. In the nurserymen's class for twelve boxes of cut blooms Mr. Turner took a first prize. He had a fine box of Miss Hassard and other popular sorts. In the amateurs' class for a collection of cut blooms in boxes, J. Hollingworth, Esq., Turkey Court, Madd-stone, took first honours with some good blooms of all the leading kinds. In the same class the second prize went to Mr. Chard, gardener to Sir Frederick Bathurst, Clarendon Park, Salisbury.

A first prize was awarded to Messrs. Barr & Sugden, Covent Garden, for cut blooms of double Pyrethrums. The same firm also sent a box of cut blooms of various bulbous plants, which were very effective. In the same class Mr. Turner sent some splendid Picotees and Pinks. They were much admired, and received a first prize. In the same class Messrs. Hooper and Co. contributed a mixed collection of plants in pots and a box of cut blooms of bulbous plants, and had a first prize awarded.

In the class for Lillium G. F. Wilson, Esq., was awarded first honours for some rare and beautiful flowers, including *L. elegans* "Alice Wilson," which received a first-class certificate. H. J. Elwes, Esq., was also a successful exhibitor in this class. Mr. Elwes also staged a fine collection of bulbous plants, which were greatly admired.

In the class for dinner-table decorations there were eight or nine competitors; taking them throughout the tables were light and elegantly arranged—an improvement on the heaviness we sometimes see displayed. The first prize went to Messrs. Pounce & Sons, 153, Queen's Road, Bayswater, for a very pretty design composed of a centre glass of cut flowers of all the choice kinds that could be obtained, including Orchids and other stove plants. The ends were filled up with similar shaped glasses only smaller, and filled with similar flowers, surrounded with small glasses filled with Stephanotis. The second prize was won by Messrs. Wood, Parnley, & Co., 19, Park Side, Knightsbridge; but appeared to be a design more suitable for a larger table. The freshness of the flowers was noticeable in all the exhibits.

A very handsome group of skeleton leaves, flowers, and Ferns was exhibited by Mrs. M. Hodgkins, 35, Hyde Grove, Manchester, and attracted much attention on account of their ornamental and silvery appearance. A first prize was awarded. An exhibition of glass in prismatic colours and decorated with Ferns was submitted by John Gardner & Sons, 453, Strand.

BUQUETS (Brides).—The first prize went to a most elegant one composed of choice Orchide, Eucharis, Tuberoes, Benvardias, Spireas, Gardenias, and Adiantums; it was exhibited by Miss Moyses, 23, St. Pancras Terrace, Belgravia. A collection of twenty-four bouquets were exhibited by Mr. W. Stone, Centre Row, Covent Garden.

Messrs. J. J. Thomas & Co., Paddington, exhibited several

examples of wirework, also tented garden seats appropriate for hot weather; and Messrs. Read & Co. had a stand of watering engines, syringes, &c.

PRIZES OFFERED BY MR. BULL.

The plants occupied a great portion of one of the sides of the tent, and produced a rich and varied effect. The first prize in Class A, for twelve plants sent out since the commencement of 1876, was awarded to T. M. Shettleworth, Esq. (Mr. Thornber, gardener), Howick House, Preston, who certainly exhibited the finest group in this section of the Show. The plants were not only in excellent health, but were very large specimens. The back plants consisted of *Encephalartos villosus amplius*, *Astrocaryum filiare*, and *Sadleria cycatheoides*, very beautiful. At the front of these were splendid plants of *Croton majesticum* and *Campidium filiciforme*; and at the front of these again were *Aralia elegantissima*, *Croton Diarseli*, in admirable colour; *Ixora regina*, very fine trusses; *Macrozamia plumosa*, *Lomaria Dalginraiae*, *Maranta leopardina*, and *Bertolonias superbiensis*. The second prize went to J. Warren, Esq., Handcross Park, Crawley, Sussex (Mr. Rann, gardener). This was a capital group, the most striking plants, perhaps, being *Croton volutum* and *Martinezia granatensis*; but all were very good.

In Class B, for twelve new plants sent out by Mr. Bull since the commencement of 1874, the first prize was awarded to Mr. B. S. Williams, Holloway, who staged good examples of *Cycas media*, *Sadleria cycatheoides*, *Brabea filamentosa*; *Croton majesticum*, *Hendersonii*, *splendendum*, and *volutum*; *Dipladenia Brearleyana*, *Aralia elegantissima*, *Goniophlebium glaucophyllum*, *Curmeria Walliæ*, and *Panax laciniatum*. The second prize went to Messrs. J. & R. Thyne, Glasgow, for a capital group in which *Macrozamia Mackenzii* was extremely fine, the rich dark leaflets having each an ivory-white spot at their base—a charming plant. *Demonorops ornata* was also very beautiful.

In Class D (twelve new plants), for nurserymen not having previously won any of Mr. Bull's cups, Mr. Wills appeared the only exhibitor and was awarded the silver cup, value £15, and £10 in money, for some fine *Cycas media* and *majesticum*. *Sadleria cycatheoides*, *Spathyphyllum pictum*; *Aralias filicifolia*, *gracillima*, and *elegantissima*; *Artocarpus Cannoni*, *Maranta leopardina*, *Lomaria Dalginraiae*, *Encephalartos Hildebrandi*, and *Cycas media*, all in excellent condition.

PELARGONIUM SHOW.

The prizes offered by the Pelargonium Society brought together a good competition, the flowers being peculiarly fresh and good. Mr. Charles Turner was awarded the first prize for six show Pelargoniums, his plants being of that excellence that has always marked the Slough collections, and consisted of Prince Leopold, Corsair, Prince of Prussia, Highland Lassie, and Archduchess. The second went to Mr. J. Hodgson; good plants, but displaying a good deal too much of stakes and ties. For four large-flowering varieties the first prize went to E. B. Foster, Esq., Clewer Manor, for Illuminator, Ensign, Artiel, and Despot; the second to Mr. Turner for Virgin Queen, Silvio, Toby, and Purity. For six small-flowered Pelargoniums the first prize was awarded to Mr. J. Hodgson for excellent plants of Fanny Gair, Lucy, Princess Teck, and Lady Carrington; the second to Mr. Charles Turner. For eighteen large-flowered Pelargoniums of the show type, but including any French or other kinds, the first prize was awarded to Mr. Turner for an excellent collection in which were many curiosities—*Elegantissima*, very old; *Duchesse de Morny*, bright pink; *Madame C. Keteleer*, each petal with large spot on the edge; *Alice*, somewhat of the same character; *Prince of Wales*, *Beauty of Hoxton*, both fine specimens of Regal Pelargoniums; *Boucharlet*, very dark.

In the class for nine zonal Pelargoniums (*horiste* class), first prize was awarded to Mr. J. Catlin, gardener to Mrs. Lermite, sen., Finchley, for some grand plants. Corsair especially was one of the finest plants ever seen. It was on mass of flower; Mrs. Catlin, salmon-coloured, almost equally grand; *Maud*, *Helen*, *Ensign*, *Rouge Laura*, *Lizzie Sayer*, and *Ellen Pearson*. For four Pelargoniums not in commerce (zonal), small plants were shown. Mr. Burley taking first prize with four of Mr. Postans' seedlings, Silvio being very fine, great stoutness of petals; R. B. Postans, dark; Negro, and Freedom. Dr. Denny was second with four of his seedlings, Marmion being the finest. Mr. George was third. In the class for eighteen zonal Pelargoniums Mr. Catlin was first with some of the newer kinds, amongst which Lucy Bosworth (Pearson), Birze's Mrs. Birze, *Charles Smith* (Pearson), very dark; *Irene* (Denny), new colour; *Lizzie Sayer*, good; *Rose of Allendale* (Denny), beautiful soft pink, large flower, fine truss; Mrs. Rogers (Pearson), fine rose. The second prize was awarded to Mr. Birze, gardener to J. H. Lermite, Esq., Finchley.

For nine Pelargoniums (decorative class) the first prize was again awarded to Mr. Catlin for fine plants of Mrs. Turner, John Gibbons, Thomas Adams, Miss Sanders, Rev. J. Atkinson, and Matilda.

A very large collection of large-flowered show Pelargoniums was exhibited by Mr. Charles Turner, comprising many of the

new varieties: amongst them Lillian, very soft pink; Challenger, brilliant in colour; Revenge, nearly scarlet; Ambassador, soft rose; Ruth, very soft pink, round and beautifully shaped flower; Rev. H. Matthews, large and fine; Maid of Honour, an old but beautiful flower; Duchess of Cambridge, very fine scarlet; Troubadour, lovely soft salmon pink.

Amongst those not yet sent out the following were exhibited in the show class—Covenanter, first-class certificate; Inflexible, a large fine flower, first-class certificate; Despot, dark; Eloquence, fine pointed flower; Fortitude (Foster), soft salmon colour; Mrs. Pope (Turner), fancy, very good; Rebel, darkscarlet.

In the class for twenty-four out flowers Mr. Burley was first with fine blooms; amongst them were Sultan, Mrs. Munster, Charm, Snow, Silvio, Galileo, Tom Bowling, Squire Weald. Mr. McIntosh of Duneevan was first in the class for twelve varieties, with twelve varieties all of Mr. Pearson's raising:—Capt. In Hodder, Lady Stanhope, Lady Sheffield, Mrs. Hunt, Lucy, Mrs. Lancaster, Louisa, Wordsworth, Frederick William. Mr. Burley had a first prize for a double white called Bridal Bouquet.

In the class for Tricolor Pelargoniums there was but one exhibitor—Mr. Meadmore of Romford, who had small but healthy plants of some of the leading varieties, but they were hardly worth the first prize awarded to them. In the double-flowered varieties Mr. J. Catlin was first with small plants of no particular merit. For a collection of out blooms of Ivies the first prize was awarded to Mr. Parker of Tooting for a fine collection, and to Messrs. Barr & Sugden the second. Some of Mr. Parker's flowers were very fine, such as Mungo Park, Victoria, Aspatia, Madame Sontag, Celeste, and Hortense.

A large gold Banksian medal was awarded to T. M. Shuttleworth, Esq., for fine-foliated plants; a large gold Flora to Messrs. James Veitch & Sons for a collection of plants, and an extra gold medal for *Nepenthes sanguinea*; a large gold Banksian medal to Mr. Bull for a collection of plants, and small gold Banksians to Mr. B. S. Williams and to Messrs. J. Jackson & Sons for groups of plants; to Mr. Mills for hybrid *Dracenas*, and to Mr. Reeves and Mr. Harby for decorative plants. The remaining awards of silver-gilt, silver, and other medals will be found in our advertising columns.

The Prince and Princess of Wales arrived at the Gardens about a quarter past five. Their Royal Highnesses were accompanied by their children, Prince Alfred, Prince Victor, George, and Princess Victoria, and were attended by Lord Colville of Culross, Lady Suffield, and Major Russell. The Royal party were received and accompanied round the Show by Lord Aberdare, President of the Society; Lord Alfred Churchill, one of the Vice-Presidents; Henry Webb, Esq., Treasurer; Dr. Hogg, Secretary; and several members of the Council. The Exhibition was greatly enjoyed by the Royal visitors, and the Prince expressed his pleasure not only at the beauty of the display, but at the improved position and prospects of the Society. A very warm reception was accorded to their Royal Highnesses by the thousands of visitors who crowded the Gardens. After an inspection of the Show the Princess of Wales distributed the medals which were awarded at the Exhibition on the 2nd May, and subsequently accepted a handsome bouquet which had been prepared for the Council by Mr. John Wills. The bouquet was presented to Her Royal Highness by Mrs. Cochrane, daughter of the Secretary, Dr. Hogg. The Royal party took their departure amidst hearty cheers from the exhibitors and visitors.

The Exhibition is admitted to have been the finest that has been held at South Kensington since the "Great International" of 1866, and it is a question if so many visitors have been seen in the Gardens during recent years. The event may be fairly summarised as follows—a brilliant show, a brilliant day, and a brilliant company.

FRUIT COMMITTEE.—Henry Webb, Esq., V.P., in the chair. Only a few subjects were brought before the Committee. Votes of thanks were presented to Mr. W. Howard, The Gardens, St. Osyth's Priory, Colchester, for Broccoli Model. To Mr. Gilbert, Bursleigh, for seedling *Melon Excelior*, a cross between the Shah of Persia and Turner's Scarlet Gem, but as exhibited it was not superior to other good sorts in cultivation. To Mr. Grieve, Culford, Bury St. Edmunds, for a dish of Royal George Peaches.

FLORAL COMMITTEE.—W. B. Kellock, Esq., in the chair. First-class certificates were awarded to Mr. E. Holmes, Whittington Nursery, Lichfield, for *Juniperus virginiana aurea alba spicata*; to Mr. Richard Smith, Worcester, for *Clematis Madame Gange*, intense maroon, the richest of all *Clematises*; to G. F. Wilson, Esq., Weybridge, for *Lilium elegans* Alice Wilson, dahuricum type, orange-yellow, very distinct and fine; to Messrs. James Veitch & Sons for *Gymnogramma Melleri* (Leane), a singular plant with large spotted pinnae; Clove Carnation Tom Thumb scarlet, very rich and not exceeding 6 inches in height; *Anthurium Waroquanum*, with leaves 2 feet long and not more than 6 inches broad in the widest part, white veins and midrib—a fine novelty; and *Anthurium Veitchii*, a grand plant with green leaves nearly 3 feet in length, much corrugated, and with

a prominent midrib. To Messrs. J. Laing & Co., Forest Hill, for *Begonia Oriflame*, a robust variety with brilliant flowers; to Mr. C. Turner for *Fancy Pelargonium* Mrs. Pope, a light variety with salmon rose upper petals, very chaste and good; to E. B. Foster, Esq., for *Show Pelargonium* Invincible, a splendid flower with very rich upper petals; also for *P. Fortitude*, white centre, salmon rose lower petals, upper petals maroon, very smooth and superior—an improvement on Ruth. To Mr. B. S. Williams for *Pelargonium* Dr. Masters (as a decorative plant), a very richly-coloured variety; *Croton Prince of Wales*, very bright, a golden *C. spirale*; and for *Thrinax gracillima*, very elegant.

A botanical commendation was awarded to Messrs. Veitch for *Pavonia Wioti*. A cultural certificate to O. O. Wrigley, Esq., for *Olonotoglossum vexillarium* with three spikes and twenty grand flowers; very vigorous. Votes of thanks were awarded to Messrs. Veitch for extremely attractive bouquets of dried grasses and flowers; and to Mr. Rose, St. George's Hill, Byfleet, for *Hemantus tenuiflorus*. Several other plants were exhibited, but no awards were made to them.

Twenty-one new Fellows were elected during the afternoon.

NOTES AND GLEANINGS.

The following letter has been sent by H.R.H. the Prince of Wales to the Rt. Hon. Lord Aberdare, the President of the Royal Horticultural Society:—

"MY LORD.—As President of the Royal Commission for the Paris Universal Exhibition of 1878, I beg to enclose herewith a translation of the general regulations issued by the French Ministry of Agriculture and Commerce in reference to the horticultural section.

"Allow me to express the hope that your Society will aid in promoting a due representation of British horticulture, by bringing the subject under the notice of any horticulturalists who may be likely to take part in the international competition, a programme of which is attached to the regulations.

"I have appointed Mr. E. T. Brandreth Gibbs General Superintendent of the horticultural and agricultural groups, and I have desired Mr. Gaultier Owen, the Secretary of the Royal Commission, to furnish you with any further particulars you may require.—I have the honour to be, my Lord, your Lordship's obedient servant, ALBERT EDWARD P."

—WE are requested to state that in consequence of the Gardeners' Benevolent Society and that of the National Rose Society taking place on Wednesday, July 4th, the usual monthly dinner of the HORTICULTURAL CLUB will not be held on Tuesday, July 3rd.

—In our report of the Royal Botanic Society's Show last week Mr. Bull was credited with having received a certificate for *BEGONIA GLOIRE DE NANCY*; the plant was exhibited by Messrs. John Laing & Co., Forest Hill. *Gloire de Nancy* is a distinct double variety which was also certificated at the Royal Horticultural Society on the 5th inst.

—A DINNER to Mr. F. W. WILSON has been arranged by the Lindley Club, whose guest Mr. Wilson will be, at the Criterion on Tuesday, the 3rd of July. The dinner is intended as a complimentary recognition of Mr. Wilson's able and courteous management of the exhibitions at the Crystal Palace during the past five-and-twenty years. Tickets, 12s. each, may be obtained of Mr. John McKenzie, 1 and 2, Great Winchester Street Buildings, E.C.

—THE GARDENS OF THE INNER TEMPLE, London, are justly famed for the cultivation of the *Chrysanthemum* and the treat which they afford to citizens and visitors during the autumn. But even of greater benefit is the large and well-kept enclosure during the summer, for the gardens are generally thrown open to children from the hours of six until nine o'clock in the evening. These children, who during the day are pent up in schools and narrow courts, indulge in unrestricted gambols on the grass, and derive thereby both wholesome enjoyment and health. How much the privilege is appreciated is gathered from the fact that when the children were counted one evening the numbers were found to be 3304. They do no injury beyond turning the grass brown a few days before the sun would do so, and that cannot be called injury; and the extra work they make is more than compensated for by the great benefit that the garden confers on the thousands of little visitors. The flower beds are now gay, and the *Chrysanthemums* have just been placed in their blooming pots. Long rows of sticks—after the manner of kidney bean sticks—are firmly inserted in the ground and supported by cross pieces, and near these rows the pots are placed, the plants being tied to the sticks. It is a capital plan: the plants look remarkably well. Indeed the state of the garden generally reflects credit on the manager, Mr. Newton.

—In the British Islands there are only thirty-nine species of native FERNS; but in the Fiji Islands more than two hundred species have been collected. The Potato Fern (*Polypodium spectrum*) is peculiar to Hawaii (Owhyhee), one of the Society

Islands. Another of the Ferns found there is called the Pulu Fern; its stem is clothed with a soft fuzz which is much used for stuffing mattresses. All the wealth of vegetation—all the superb plumage of the birds of these southern islands, cannot be compared with the charms of an English home.

— We have recently seen a monument erected to the memory of a gardener who died in very indigent circumstances. It reminded us of the following relative to the author of "Hudibras":—

"When Butler, needy wretch, was yet alive,
No generous patron would a dinner give.
See him, now lifeless and reduced to dust,
Presented with a monumental bust.
The poet's fate is here in emblem shown—
He asked for bread, and he received a stone."

ROSES.

THE Rose season is opening very favourably in this neighbourhood (Alverstone, Hants). After a dripping and mild early spring, succeeded by a cold and boisterous later spring, we have had a fortnight or three weeks of genial weather, and the Roses are very fairly responding to it. I to-day counted on the front of my house 105 full blown Roses, besides a profusion of buds, consisting of Devonensis, Gloire de Dijon, John Hopper, Charles Lefebvre, Duke of Wellington, and what is especially gratifying, they are entirely clean. Thanks to the treatment recommended by Mr. Rivers—of syringing with quassia decoction and soft soap, an infallible destructive of aphids in any form or species—the other Roses in the Rose quarter are equally promising for a good show. Dwarfs on the Manetti are especially good.—A CONSTANT SUBSCRIBER.

MR. BENJAMIN SIMONITE.

[ALL florists, and others besides florists, will be glad to see a life-like portrait of a worthy man engaged so handsomely and succeeding so well in improving some of the most beautiful flowers of earth—florists' flowers. Than gardeners, and those engaged in gardening, none appreciate more fully the efforts of those who make difficulties vanish by ardent love for an object and steady perseverance in attaining a goal. Many gardeners, in a hundred ways, fight uphill battles and win, and all such will welcome a glance at one who has won against such great odds so many honours. We did not intrude on his modesty by asking of him to tell us of himself, and glad are we, for we should have thereby been deprived of the following biographical notes so fresh, full, and entertaining.]

BENJAMIN SIMONITE was born June 25, 1834, at his present residence, Rough Bank, Sheffield, while yet the fiery black town had not yet spoiled the beautiful valley in which it lies.

His river, the Sheaf, used to flow in fresh from a course through corn field and meadow; country summer perfumes of hay and bean fields in blossom would steal at evening into its outlying streets. Heights on the valley sides like Rough Bank were breezy country walks, sprinkled with wild flowers and gay with golden Broom and other shrubs. Many a garden plot brightened the outskirts of the town. It was almost wreathed in flowers, and there were probably more Auriculas and other florist flowers grown forty years ago around Sheffield than any other of our towns.

But now, like a monstrous illustration of maggot in a flower bud, Sheffield as it grew has eaten out the natural beauties of the shelter that has nurtured it, and turned everything to its own purpose and use. The last man one would expect to find there now in the thick of the grimy noxious air is a florist with his flowers. Even then we should expect to find him but a miserable lingerer, clinging to a spot not fit for him, like a furnace-blasted tree that is dying out top first by inches—a man disappointed of his hope, struggling but sinking all the while, with every conceivable and some inconceivable odds against him, but instead we find the wonderful reverse in seeing one brilliantly successful where dismal failure would be no shame.

Benjamin Simonite, and here let me add his father too, are veritable heroes in floriculture. To his father, a severe and true and careful florist, he owes his early right training and guidance in florist flowers; and the two still work on at the old garden that has seen brighter and yet not better days. They have bravely battled against the terrible destructive agents around, and have had such losses as would have carried down most men's patience, and enthusiasm, and hope in the sunken wreck. Even with all their ever-watchful and experienced

care one feels anxious for the floral treasures stored in such an unworthy, unsafe, dingy, rickety old easel.

There was nothing eventful in Benjamin Simonite's early life except his intense fondness for a garden, and for this he was always the one in the family taken wherever his father went on floral excursions. What he calls "the little education I got" was obtained before he was thirteen at the National School, at which age he left to follow his father's trade; but he did not make this the excuse for forgetting what he had learnt or for not adding to it. He works at what is known as a "two-handed trade"—i.e., it takes two pairs of hands to turn out his work. It looks simple, for a skilled hand always gives an illusion of deceptive ease, but it is hard labour. I have watched him at it many a time, and when we have shut up shop—fancy my saying "we" for only looking on—and we have gone down to the garden together, I have seen his strong right hand shake strangely over a Carnation bloom; and I have known by the quiver of the pen in many a letter that he had set down to write fresh from the iron labour of the day. The workshop is a little smithy next door to his house, and like a village blacksmith's in the music of the anvil, but with an air of refinement and speciality about it in its more complex tools and richer metals, for the best steel and iron are here in convenient rods and bars.

As for the curious tools, you might imagine he had successfully raised a quantity of seedling tongs and hybrid hammers, and had interesting sports, curious strains, and double varieties. They are all named of course; and Ben Simonite, like the printer, has his "devil," a vicious little thing that will not touch cold steel, but must have it sparkling hot. His particular department of outlery work is the beating of table knives out of steel bars, which he has been accustomed to work up for Rodgers and other eminent Sheffield firms. His mate will heat the steel bar in a fierce little fire and join in a few heavy blows on the anvil. The blade is then rounded, flattened, and shaped for the grinder by Ben Simonite, and the haft is afterwards welded on from an iron bar. In the Rough Bank smithy I first learned that the kind of thumb mark visible in the metal close to the handle of every knife is the ineffaceable junction of the pure steel graft upon the commoner and perhaps more vigorous iron stock.

In 1860 occurred the event of his marriage, but he has been a widower these fourteen years. Of his three children two survive, and those of us who know him intimately recognise the names that are dearest amongst those given to his favourite florist flowers.

He first grew Pinks and Pansies, and then the Dahlia, and took them to the shows. Quite aware that to thoroughly enjoy, and indeed to do justice to a florist flower he ought to be able to make the best of a good thing when he got it, he carefully studied the principles and practice of the science of dressing-in such flowers as have beauties which Nature indeed would be content to never show, but which a florist cannot bear to leave hidden or obscured. There are many styles of dressing, just as there are daubs and masterpieces in painting. There is the round, the flat, the stiff, the free, the loose, the laboured; there is a peculiarity in each man's style. In Ben Simonite's not a trace of anything artificial—a calm repose and a very sweet simplicity. It is high art. You may make a Carnation look as vain as a peacock or modest as a Violet. He will bring out every point of beauty, and the flower he ravishingly unconscious of it.

At fourteen years old he took up the Tulip and sowed some pods of seed with results akin to his well-known work with Carnations and Picotees. The Tulips, however, have suffered so severely now for years from the horrors of the situation that they only bloom to fall; indeed, they have frequently had to go away for their health. Beds in the old garden have been swept off, and the stock only kept up by offsets planted elsewhere.

He commenced cultivating the Carnation and Picotee in 1848, and, unable to keep pace with growers whose means were ample, he patiently began to work up to them by a surer and nobler power than that of money, and one that soon overcame it. This was by studying careful crossing, and his seedlings have simply turned the flower over and over again, and the richest and best in every class are his. He has worked up to such form and substance here that twenty-four petals make a completely full and large flower; but then they are petals, and the area of four dozen of the old sort is not equal to the acreage of two dozen in a Sheffield seedling, nor able to make half such a flower. In neighbouring shows for Pinks and Picotees

they actually at last would not allow Simonite to compete with his seedlings. They were too lazy to try and beat him in that most splendid of all florist races, the race with seedlings, and too mean to let him win what he deserved. I do not know what shows these were, or who the sapient committees; but I should like to gibbet them here, who dealt so ill with this man and all the best interests of florist flowers. That there were such unprincipled doings is a disgraceful fact, and it is well if the small shows where they could be perpetrated are extinct.

Latest but not least of the Rough Bank favourites are the Auriculas, which were started with in 1860. These were for long a sorely difficult flower to manage, and indeed will hardly grow there at all in frames. House treatment of them is, how-

ever, a totally different matter, and in their spsn-roofed home they really do appear at home and are a grand specimen of culture. In these, as in the Carnations, Picotees, and Tulips, the best are his own seedlings.

I wish in conclusion I could describe the growing horrors with which Ben Simonite and his father have had to contend these forty years at Rough Bank. Nothing is safe now except under shelter, and ordinary erections are perfectly futile. A Tulip tent would be swept off the face of the earth in a wind, and frame lights have been carried away like autumn leaves; bell-glasses must be wired down by their wood plates under a flower as if they were soda water corks. Nothing but iron and glass firmly secured will outlive the tempests that sweep Rough Bank. Tulips are mown off this year, and I have seen



Fig. 65.—MR. BENJAMIN SIMONITE.

Carnation blooms blown literally in drifts into the hedge bottom. It is a cruel place; but now there are houses for the Auriculas and Picotees, though the buds are still under temporary shelter, tedious to erect and most curious in their way. Take a stranger to see the bloom here and he would say, "What do you call this? What have you brought me here for? Do you mean to insult me, sir?" For here is not a flower to be seen, but a crowd of supports and sticks, bearing an incongruous, motley, laughable bloom of old saucepans and pot lids, decrepit earthenware, unsound tumblers, a foundered teapot, castaway boxes that have contained somebody's pre-eminent mustard, soap, or chocolate; a derelict kettle such as would delight the hard souls of Sheffield boys to tie to the tails of Sheffield curs; all these and other like adaptations of odds and ends make up a very nightmare dream of a breeder. Yet under all these most uncouth and battered shells is some fair gem, some spotless Picotee in inconceivable contrast to its surroundings, and infinitely more to be wondered at as it stands than a pearl in its native oyster.

All Benjamin Simonite's brother florists and friends, and many strangers will be glad to see here the visage of his patient

face. He leaves every lover of a flower without excuse for failure. Situation! Look at his, though I cannot half describe it. Time! Look at his, largely not his own. Weariness! Look at his, in a hot and heavy trade. Means! Well, look at his. He is not ashamed if I say plainly they are small, and I wish they were larger. That is the dark side; but look how perseverance, patience, and watchful care and love brighten all of it up for him. A brave fellow, with indeed many a floral misfortune, but never a grievance, and always at last success. —F. D. HORNER, *Kirkby Malzeard, Ripon.*

NEW EDITION.

The Orchid-Growers' Manual. B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N.

HAD not this been a good and an useful volume it would not have reached its fifth edition. It contains descriptions of upwards of nine hundred species and varieties of Orchidaceous plants with practical notes on their cultivation. The volume is not only useful but attractive, for it contains several engravings and one of the finest-coloured plates of *Odontoglossum*.

sum vexillarium that we have seen. Not only are rare exotic Orchids described and intelligible modes of growing them given, but there is a chapter on Orchids for the greenhouse, cold frame, or pit, wherein the author observes that—“Orchid-

growers too often set on one side all those which do not succeed under artificial heat. My object in introducing the subject is to bring into notice some of those beautiful terrestrial plants from the Cape of Good Hope, North America, the South



Fig. 63.—1, *CYPRIPEDIUM ATSMORI* (Many-leaved Japan Lady's Slipper). 2, *CYPRIPEDIUM GUTTATUM* (Spotted-flowered Lady's Slipper).

of Europe, and Anstralia, which at present are only seen at rare intervals, but which when seen are always admired. It also opens a field for many not possessing the advantages of an East Indian and Mexican Orchid house, or, indeed, any plant house, to commence the study of this beautiful class. The terrestrial species, from the Cape and other places, which do not as a rule produce large flowers, are yet most exquisitely coloured and most fantastic in shape. We have, however, some fine things to introduce from the Cape yet. Mr. Plant,

in one of his journeys in South Africa, in describing some of the rarities he met with, says:—“The terrestrial Orchids are numerous and very beautiful. In my opinion there are many here but little inferior to the most showy of the epiphytous kinds. Fancy a plant with the general character of an Ophrys producing a spike of bloom as large and as thickly set as those of *Saccolabium guttatum*, often indeed measuring 2 feet in length, of a bright salmon colour, intermixed with as bright a yellow. Another with plaited foliage and a nodding head of

some twenty bright yellow blossoms, having a deep stain of crimson on the cucullate lip in the manner and of the size of a *Dendrobium*. Again, another with fleshy leaves and an erect stem of about 2 feet, supporting from fifteen to thirty large yellow flowers, the lip lined and blotched with pale purple, bearing the aspect of some robust *Epidendrum*. Many of these fine things would no doubt ere now have enriched our gardens had Mr. Plant been spared to return alive. What can be more gorgeous than the *Dia grandiflora*? There are numerous members of this family at the Cape, and though they are not so large in the flower as the species just named, yet they are exquisitely beautiful. Again, the elegance of the North American *Cypripediums* is not surpassed by those which inhabit the tropics. Now all these can be cultivated in a cool greenhouse or frame, either planted out or in pots. Indeed, many of the terrestrial kinds will succeed well in the open air if a little care is bestowed upon the selection and preparation of the situation. The number of species I have here enumerated is not extensive, but there is no reason to prevent us in the course of a few years from largely increasing them if the plant-loving ladies and gentlemen, as well as gardeners, will encourage the growth of these beautiful plants; and anyone having friends at the Cape, North America, or Australia, should strongly press upon them to send home the tubers of any Orchids they may find. By this means we should have a great many new additions to our collections.

"The terrestrial species must not be elevated above the rim of the pot, as is the custom with the epiphytal ones, but there must be a space of an inch or more from the rim to the soil to allow of a sufficient quantity of water being given at one time. The soil best adapted for their growth is a mixture of good fibrous loam, turfy peat, and silver sand, adding more or less of each according to the peculiar habitat of the particular plant to be potted. They must all have good drainage, and the addition of lumps of sandstone to the soil will have a beneficial effect, serving to keep the soil open and the roots cool and moist. They are mostly all propagated by division of the roots just as the fresh growth commences; and though they all require a season of rest, they must never be allowed to become dry at the roots, nor must the temperature be allowed to be lower in winter than from 35° to 40°, not but some of the kinds will withstand some few degrees of frost, but I believe they will all thrive far better if not subjected to such extremes. In the growing season abundance of water should be poured round and about them to keep a moist and cool atmosphere, in which they delight."

Mr. Williams then describes the *Cypripediums*, but we can afford space for only two species:—*Cypripedium Atomari* (Many-leaved Japan Lady's Slipper). A leafy-stemmed hardy perennial, growing about a foot high, with acute, lance-shaped, plaited, smooth leaves, and about two flowers, of which the labellum is yellow, slipper-shaped or calceoliform, and the sepals and petals rich purplish brown, the petals with purple hairs at the greenish-yellow base. It is allied to the true *C. calceolus*, according to M. Morren, from which it differs in having its leaves more lanceolate and glabrous, in the bracts being much more narrowly lanceolate and pointed, in the flowers being altogether narrower and more mesgic, in the base of the petals being distinctly hairy, in the remarkable narrowness of the sepals, in the less ventricose pouch, cleft rather than toothed in front, in the lengthened trowel-like form of the sterile stamens, and in the longer filiform base of the lateral stamens. From Japan. Introduced by Dr. von Siebold in 1830 to Belgium. Flowers in summer. Probably cultivated in the botanical gardens of Ghent and Leyden.

Cypripedium guttatum (Spotted-flowered Lady's Slipper). A beautiful little herbaceous perennial. It has a short stem, bearing a pair of ovate-elliptic, emplexical, plaited leaves, with the margins and ribs hairy. The flowers, one to each stem, are white, beautifully blotched with rose purple. The sepals and petals are shorter than the lip, which is subrotund, with a plain surface. The whole plant is under 6 inches high, the flowers measuring about 2 inches lengthwise. It grows in boggy places in cold countries, but appears shy under cultivation. From Siberia and North America. Introduced originally in 1823. Flowers in summer.

SUGGESTIONS FOR EXHIBITING TEA ROSES.

On comparing a stand of Tea Roses with one of Hybrid Perpetuals I think one is struck with three peculiarities in the former. First, the prevalence of yellow, light, and bewitching

half tints in the Teas; secondly, with their large, graceful, wax-like petals, not quite so compact and symmetrical as the Perpetuals, but more artistic and picturesque in their outline; and lastly, their refined and peculiar fragrance. Now to bring out these points to the greatest advantage by contrast of form and colour, would it not be well at the Grand National Rose Show and other societies to offer some good prizes, specified as under?—

For Nurserymen.—A stand of twenty-four trebles, consisting of twelve Teas and Noisettes, twelve Hybrid Perpetuals and Hybrids, three trusses of each, as far as possible in different stages of development. The Teas and Hybrids to be arranged alternately.

For Amateurs.—Twenty-four singles, half Teas and Perpetuals, arranged in like manner.

This would insure a bright and most attractive stand of flowers, and would be appreciated by all rosarians. Tea Roses should not be judged by so severe a test as Hybrid Perpetuals; but while many, such as Niphetos, Madame Hippolyte Jamin, and others often throw their large beautiful petals beyond the circular line prescribed by the florist, it is indispensable for perfection that these should have high full centres.

Since writing the above I am happy to state that the Hon. and Rev. J. T. Boscawen has kindly offered to test the merits of the above suggestion by offering, as at Bath, two ten-guinea cups for stands of alternate Teas and Perpetuals at the Oxford meeting. Another interesting feature might be added to our Rose shows by giving a prize for a stand of twelve tinted Teas, such as Jean Ducher, Comtesse de Nadailac, Marie Van Houtte, Homer, David Pradel, &c.; rich colour and distinct shading to take the precedence of size in this class, thus encouraging the production of these brilliant gems which are always so much admired.—HENRY CURTIS, *Devon Rosery, Torquay*.

GARDEN ENEMIES.

As everybody but Mr. Huie and "A MASTER GARDENER" are agreed that bullfinches are garden depredators, it would be well if all world wage war against our common enemy, and his forces would be speedily reduced. In the winter months probably the readiest weapon is a double-barrelled gun, but in these days everybody is not allowed to carry a gun, and the law which prevents it is, for aught I know, a good one, even though it is inconvenient to a few. But failing a gun there is another and a more certain way of destroying them at this time of the year. Of course it is cruel, but we cannot help it. It is impossible to have both bullfinches and outdoor fruits; nay, the very existence of the trees is at their mercy where they are as numerous as they are here. I have had fifty-nine of them shot in and close to the kitchen garden this season, but still they seem as plentiful as ever; and if the remainder are allowed to breed unmolested their numbers will be speedily increased rather than reduced, for they are not content with bringing-up one family in a season, but must needs have two or three. Their nests are easily found by watching the old birds about, and advantage must be taken of their well-known filial affection by placing the young birds in a trap cage. The simplest arrangement that I know of is a sort of double cage, one compartment being underneath to hold the young birds, and another which the old birds are obliged to enter to convey food is at the top and closes immediately the perch is touched. A piece of stout elastic stretched while the door is open holds it sufficiently firm to prevent the bird's escape when closed. Both old birds are certain to be caught within an hour or two after the trap is set, as they never fail to attempt to feed the young at whatever age they may be. Of course, it must be rendered impossible to convey food through any other part of the cage than the one intended.

The next great enemy which I have a word to say about is the wasp. I know of a great deal of good which the wasp does. He renders very efficient aid to the gardener, nor I had better not tell your more sentimental readers what it is, or they may claim a close season for him, and as his bad deeds more than counterbalance his good actions I would rather have him destroyed. The year before last I paid something more than £40 for wasps and vermin; nearly all of it was for wasps, and yet wasps there were by the million, so that not even untame Apples were safe from their ravages. I thought it was time to have a change. Even if I went back to the old plan of letting them take their chance things could not be much worse. Queen wasps are always paid for; that I consider a most effectual way of keeping the numbers down.

Hardy. 4, S. Barlow, with Excalibur. 5, D. Barber, with Seedling. 6, D. Barber, with Seedling. 7, D. Barber, with Seedling. 8, J. Hagee, with Richard Yates. *Rose Breeders*.—1, S. Barlow, with Mrs. Barlow. 2, T. Mellor, with Annie McGraw. 3, S. Barlow, with Lady Grosvenor. 4, H. Hill, with Atkin's Seedling. 5, D. Barber, with Mabel. 6, T. Haynes, with Lady May. 7, J. Hagee, Unknown. 8, W. Whitaker, with Mrs. Bates. *Hybridizer Breeders*.—1, T. Haynes, with Beauty of Litchurch. 2, T. Haynes, with Seedling. 3, S. Barlow, with Ashmole. 4, J. Hagee, Unknown. 5, J. Morris, with Chancellor. 6, D. Barber, with Seedling. 7, S. Barlow, with Seedling. 8, D. Woolley, with Seedling.

Class 13.—For the best header Tulip in the whole Exhibition, 2s. 6d., in addition to any other prizes it may have won.—S. Barlow, with Mrs. Barlow. The Northern Counties Tulip Society's Show was held at Gorton on the 8th inst.; but as the majority of the best flowers are named above it is not necessary to publish a list of them.—(Communicated.)

MR. J. BOOTH'S FLORISTS' FLOWERS,

POLE LANE, FALLSWORTH, NEAR MANCHESTER.

It was not a propitious day when I set out to visit this home of one of our northern florists, whose garden has long been noted for some fine collections of florists' flowers. The rain was coming down in torrents as it can rain at Manchester, and I had but a vague notion in what part of Falloworth Mr. Booth resided, and I soon found to my cost that this was a material point. It is said the world knows but little of its greatest men; and so, although I attempted to faithfully describe whom and what I wanted, neither the omnibus conductor nor any of his passengers could give me any definite account. One told me of a Charles Booth who had a garden, and so I concluded this must be what I wanted; so I got out in the rain to find it. A young woman informed me, "Oh yes, he attends our chapel," and so I went into some back streets, to find, alas! that I was on the wrong scent. I then had to come back into the high road and to walk a good mile or more before I came to the right place, which I found out on inquiry from one or two persons to be in Pole Lane, so called from a high pole with a weathercock at the top of it. But when I found the place I did not find the man. He was "gone down into Lincolnshire about some colts;" and although his brother kindly showed me over the little place, yet I greatly regretted not having the pleasure of seeing Mr. Booth himself. The garden is a small one—a thorough florist's, containing two or three houses, a number of pits, and a small piece of ground for planting out Pinks, &c., in. It reminded me very much of some of the old florists' homes I used to be acquainted with in Dublin, and I felt confident that I should find much to interest me.

My first inquiry was about Auriculas. I knew that the bloom was so very late that, although it was the 16th of May, I did not despair of seeing some in flower. Nor was I disappointed. I found them growing in a house, and the comfort of this was apparent on such a day. Had they been in frames it would have been wretched work pottering about after them and having to lift up frames, &c.; and this has a great deal to do, I think, with what seems to old florists an innovation. The house is a span-roof 36 feet long by 8 feet wide, the height 7 feet. The walk is about 2 feet wide, and is sunk 3 feet so as to give head room; this gives a space 3 feet wide on each side on which the plants are placed. It is heated by hot-water pipes, another innovation about which I must say a few words. I find that a few growers, and but a few in the north, have adopted this plan, which was utterly unknown to the older florists, and is still by most modern growers considered needless, and seems to me to have arisen from two causes. First the change which has, I imagine, taken place in our springs for the last four or five years. They have been so cold and cheerless that it has been almost impossible to get Auriculas in time for the shows. I remember when there was no difficulty in having them in cold frames in flower by the middle of April, but for the last four years they have not really, under the same treatment, been in flower with me until May; and when in 1862 the National Auricula Show was held on April 30th the southern growers considered it to be too late, but lately it would have been about right. Another reason is that to which I have alluded above—the greater comfort to the grower. One friend writing to me on the subject says, "I, when frosty, apply heat with hot-water pipes to keep the house at, say, about 36°; this I have done for the last four years. All the other Auriculas in this district (Halifax) are grown in cold frames. Many of the old hands are opposed to having them in houses. My garden is a thousand feet above the sea level, and I must consider myself as well as the plants." And although old George Lightbody or Richard Heady never dreamt of heat; also while my old friend Dr. Plant, whose collection and style of growth I have never

seen excelled, would as soon have thought of eating them as of doing it; and while Mr. Jeans or Mr. Bramhall never applied heat; nor in the present day do Mr. Wilson whose Col. Taylors always are to the front in Manchester, Mr. Tymone who took first prize in Dublin, Mr. Tandy whose collection was always in the winning place, and many others in the north, in Ireland, and in Scotland never have given up the cold frame;—yet I must say for the grower the house has great advantages, and I am not at all sure whether, as one feels the years creeping on, I shall not myself alter my pit into a house.

So much for the house, and now for the plants. There was an exceedingly good collection in it in capital health, and I am inclined to think that are long exhibitors will find Mr. Booth to be what is called "an ugly customer." There were some fine blooms of many leading varieties still in perfection—Lancashire Hero, Richard Heady, Oliver's Lovely Ann (dun green), Lord Palmerston, Heap's Smiling Beauty, &c. But I was most attracted by two new flowers; one, raised by Mr. Read of Market Rasen, called Dr. Horner, a very fine grey edge, which was exhibited last year at Manchester; and another, a seedling of Mr. Booth's, which if I mistake not is likely to take a first place in its class—white edges. The tube is a good yellow, a point in which some white such as Taylor's Glory are defective. The paste is very solid, ground colour black, and the edge undeniably white. The whole flower is a beauty, and as it seems to be a good grower I think that we shall hear a good deal of it by-and-by when Mr. Booth has a sufficient quantity to let out. Mr. Horner is a fine grey edge with good paste and tube, and obtained a first-class certificate at Manchester last year. We have a good selection in this class, but as good white edges are few that was to me the more interesting; and in the future those who succeed us may look forward to a much better selection probably than that which we now have.

Of Carnations and Picoetes Mr. Booth has a very large stock—upwards of 2400 pots, or "moogs" as they call them here. Two and three plants are grown in a pot, so that the number of plants is very large. It is found by Mr. Booth that the newer varieties being more robust are displacing the old, it being true of them as of many other plants, that after a time their vital powers diminish; and the object of raisers of seedlings is now to obtain fine varieties with the vigour of constitution that youth gives. And I suppose that plants which were originally not of very strong constitution sooner give way; for while they apparently have little power of increase, there are others which give plenty of grass. When therefore we find one raiser such as Ben Simonite bringing forward in one season varieties which obtained, I believe, fourteen first-class certificates, it may readily be imagined that such a realisation is not far distant. Carnations seem to be most difficult in this respect, far fewer good new varieties of them having been exhibited than of Picoetes. Mr. Booth is also an extensive grower of Pansies and Pinks, especially Pansies. Here again I think some climatic change must have been at work, for it is in most places most difficult to keep them, and yet in former years I do not remember that we suffered as we seem to do now. Mr. Booth's Pinks are grown in beds 2 feet wide, and both in these and Pansies his prices are most reasonable. Fine show Pansies can be had from 3s. to 6s. per dozen, and Pinks at 6s. also—cheap enough to tempt anyone to try them. He has all the leading varieties both old and new, the raising of Pansies being now almost if not altogether confined to the Scotch growers, whose moister climate seems so well suited for the Viola tribe.—D., Deal.

PROPAGATING LEUCOPHYTON BROWNII AND KLEINIA REPENS.

LEUCOPHYTON BROWNII.—This is a very novel and ornamental plant for decorative purposes, and where refined taste is displayed in the flower garden it will be found invaluable. It has a peculiar and attractive bright silvery appearance, and can be pegged or cut down to almost any required height; but its beauty is more striking when left about 6 inches high. I regard it as a great acquisition for carpet beds, both its habit of growth and its colour making it well adapted for forming divisional lines in beds of bright colours, and when used in this way it is sure to win admiration; yet with all these good qualities it is seldom met with. This I think is owing to the difficulty that is found in its propagation. In the first place the plant does not like fire heat, which makes it grow weakly, and cuttings taken off then are almost sure to damp-off; but

if plants are grown without fire heat with plenty of air they will be strong and bushy. From those healthy plants slip off small sturdy shoots (do not cut them), and insert them in light soil with plenty of silver sand in it; press them firmly in the pots, and then plunge in a very gentle bottom heat of leaves or dung; shade them from the sun's rays, but not densely—just sufficient to prevent them flagging, and they will be rooted and ready to pot-off in a month. They should be potted firmly. In the autumn I have found them strike well under a hand-glass in the same way as we strike Pinks, &c. Small plants planted out now in good ordinary garden soil in a warm situation will afford plenty of cuttings during the summer and autumn months. They should be wintered in a cold frame, and old plants can be taken up and potted and similarly wintered, for they are not quite hardy. They winter better in a frame than on the stage of a greenhouse.

KLEINIA REPENS.—This is a very distinct succulent plant. It has a most peculiar shade of colour—greyish blue; in fact, it has more blue in its foliage than any other that I am acquainted with. It is a very useful plant for artistic geometrical designs, for it makes a pleasing contrast with any colour. No edging plant is more distinct, and few are more effective. It is easily propagated. Every leaf may soon be made into a plant without any difficulty. In the first place prepare some pots or pans as follows:—Well drain them, nearly fill them with soil, and place half an inch of silver sand on the top; then strip off the little round-pointed leaves from the plant (do not cut them) by gently pulling them downwards, beginning at the bottom and working upwards. The top cut off with an inch of the stem will make a plant very soon if inserted in the sand. June, July, and August is the best time for the propagating of all succulent plants from leaves, and it is necessary to expose them to the free action of light to prevent damping and to induce root-action. The soil and the sand should be watered previously to inserting the tops, and again afterwards to make firm. Place the pots or pans upon a shelf near the glass, and without any more attention being given them they will be on their own roots in a fortnight. The leaves may be pricked-in in the sand in the same way, or they may be laid on the surface. They will make roots in the air and find their way down into the soil. A large stock of *Kleinia* may thus be raised in a very short time.—N. COLE.

GIVING AIR.

I HAVE no means of judging the result of "X's" practice, but his theory (see page 379) certainly does not commend itself to me, and I have no doubt he is correct when he says his lessons are hard to learn, and that he is obliged to supplement them occasionally with what he terms a "slight wiggling." One reason why such men as "X," find a difficulty and accuse their young men of inattention is that the young men of the present day are shrewder and more intelligent than their predecessors. While "X," has been standing still and fostering his old master's exploded notions concerning "letting-off bad air and vapour" from a forcing house, the world, and possibly some of "X's" assistants, have been moving. Happily now educated people are all becoming gardeners, and are scientific too, and the reign of the old school is doomed.

I have on several occasions tried to put my ideas on paper concerning air-giving (see this Journal for February 4th, 1875, and February 3rd, 1876), but it is not at all an easy matter to write on. "A NORTHERN GARDENER" has also at times written on the subject, and written well too, as he does on every subject he undertakes.—WILLIAM TAYLOR.

OUR BORDER FLOWERS—CROWFOOTS.

WHAT changes have come over us and the world since Miller gave to the world that wonder of the age, his botanists' and gardeners' dictionary! Speaking of the Peony, he says that culture gives to this plant double flowers and alters their colour into all degrees between a deep blood colour and white. The leaves also become broader or narrower from the same means. We readily admit that cultivation does a great deal in producing fine foliage, but I am in doubt as to cultivation producing double flowers; however, we give credit to authors that advance their experience for the good of others. Strange stories are told about our border and other flowers. We are told that "*Peonia*" is derived from a physician named Peon, who was the first to use this plant in medical practice. The Greek legend adds that he used it to cure Pluto of a wound

inflicted by Hercules, but does not tell us the properties of the plant. It is said that the Daurians and Mongols hold the roots of *Peonia edulis* in their broth, and grind the seeds and put them in their tea.

It is recorded that when the double red Peony was introduced at Antwerp in the sixteenth century it was sold for twelve crowns a-root, but now they may be obtained for as many pence. Our favourites are numerous and widely distributed, for they are "at home" in China, Siberia, Candia, the Levant, North America, Russia, Spain, Switzerland, and even our highly favoured land is credited with one of the family, but I rather doubt its claim to citizenship; yet *Peonia coralina* is no despicable border flower, but how seldom is it met with! I venture the assertion, though reluctantly, that our Crowfoots are among the neglected flowers. Coarse? Yes, we admit that; but look at them from a distance, and then tell us whether their colours are magnificent or not. Lumpish? Granted; but are not balls of crimson and other colours desirable? Give the plants an open space in a large shrubbery, or any other place where you wish to have a blaze in summer, trench up the space 2 or 3 feet deep, incorporate with it some good friable loam, well-decayed manure, vegetable matter, and coarse grit; then let some of our vendors select twelve or twenty-four varieties, and have them planted at good distances and well attended to, and then tell me if they are not beautiful. They will thrive in a moderately dry situation, yet should have water when required, and be secured with stakes to prevent them being injured by the wind. When once established some of the smaller-growing kinds are suitable for the herbaceous border, and are highly effective in early summer. We have during late years had some very choice additions to this family, and they only need to be seen to be appreciated. *Peonia tenuifolia flore-pleno* is a real gem, and ought to be found in or about all gardens. *P. fragrans* should also have a prominent place, and *P. paradoxa*, *P. finbriata*, and *P. anemone-flora* only need to be seen to gain a place in the estimation of the lover and cultivator of border flowers.

They are increased by seed, which is best sown as soon as ripe in rich light soil placed in a cold pit or frame and kept moist. Patience must be exercised, as the seed may not germinate for a twelvemonth or more; they may also be increased by division in the autumn, or in spring when growth has commenced.—VERITAS.

DRACÆNA AUSTRALIS.

MR. CALVERT, in his paper on Crotons and *Dracæna* read at the Darlington Gardeners' Institute, mentions *Dracæna australis* as useful during winter months for indoor and conservatory decoration. I quite concur in Mr. Calvert's views, but at the same time we have *Dracæna australis* here now flowering (June 12th) in the open air. It was planted out five years ago in centre of a large flower bed at a great elevation above the sea; it has received no protection of any kind. The plant is about 10 feet high to where the flower spike began to show. The spike appeared early in April, and is now 4 feet high and 3 feet through at the bottom branchlets; it is now opening its beautiful white flowers.—S. DEADMAN, *The Gardens, Torquay, Teignmouth, Devon.*

NOTES ON VILLA AND SUBURBAN GARDENING.

The dull, cold, and sunless weather of May has been followed by strong and searching winds, so that in every department of the garden there has been and is still much to do to keep all in first class order.

In the flower garden bedding-out, even in the most backward of situations, ought now to be brought to a close. The latest of spring-bedding plants are over, and subtropical plants will not now feel their transition, but will take hold of the soil at once and grow away freely. These and all other plants planted-out for the embellishment of the garden should be encouraged by every means to make a rapid growth and to cover the ground as early as possible. Copious supplies of water are highly beneficial to them. We generally, after planting, draw the soil away from the base of each plant, forming little hollows, and then give to each bed a good soaking of water, and afterwards run the hoe through the beds to settle the soil around the roots.

Thuddendrous and other American plants—as well as many of our beautiful flowering border shrubs, such as the most varieties of Hawthorn, Lilac, Laburnum, &c.—have bloomed well, but their period of flowering was both late and of very short duration, owing to the protracted cold suddenly followed

by parching winds and hot sun. Pick off all dead flowers and seed vessels from *Rhododendrons*, &c., as fast as they go out of flower, in order to enable them to make new growth without a chance of swelling or perfecting their seed pods. They not only snap off the easier and more readily while young and green, but the plants are much benefited by their removal, as they are the better able to perfect their new growths for next year's bloom.

Trees and shrubs which were transplanted late and are showing signs of distress will require frequent supplies of water. Many trees which a few weeks since looked both fresh and green have not made sufficient root-action to withstand drought, and they will consequently dwindle away and finally perish unless a good soaking of water is given to them occasionally. If the surface of the soil is covered with manure—mulching—immediately after the water has been applied, its benefit will be the greater and much labour will be saved.

Newly-laid grass lawns, if they show any signs of cracking, should have some fine soil placed in the cracks, and have a good soaking of water also and a thorough rolling afterwards. Neatly-clipped edges both to borders and paths, a smooth and even turf, and an absence of weeds are indispensable to every well-kept villa garden.

Amongst fruit trees much attention is now required, more especially to trees on walls. Peaches and Nectarines are sadly affected with blistered leaves, the result undoubtedly of the long-continued ungenial spring. Picking off these malformed leaves and giving the trees a good watering daily with a garden engine is the best remedy, and about the only thing that can be done to accelerate their growth. Stop all shoots growing straight out, or as it is termed breastwood, and tie or nail-in all young healthy shoots in their proper positions. Strawberries will require thorough applications of both clear water and liquid manure, or many of the fruit blossoms will be found to go blind or barren. When black or other flies appear on Cherries or other fruit trees, spraying the attacked points with a solution of soft soap and tobacco water is one of the best of antidotes.

To keep up a continual supply of gay flowers in the greenhouse or conservatory it will be necessary to frequently clean house and change the plants; decayed flowers and leaves must be regularly picked off, and plants will not last as long in bloom now as they did while the weather was cooler. Draw down the shading while the sun shines directly on the house, and keep all pots scrupulously clean. Thorough cleanliness in this department is always important.

Nearly all plants used during the winter have either ceased flowering or are fast going out of bloom, and must be removed to make their summer growths. *Pelargoniums*, as soon as they are past their best, should be removed to an open place out of doors, where they may harden their wood and be cut down. The tops strike very readily, and if potted-on make fine plants, which will produce six or seven heads of flowers for next year's supply.

Azaleas and *Camellias* which have bloomed late must be removed to a pit where they can be shaded, syringed, and shut up close in early afternoon, or to ainery where they can receive the benefit of both shade and moisture. A great deal of next year's success of blooming depends on having quickly grown and well ripened new shoots.

Roses grown in pots have now ceased blooming, and must be removed to the potting-bench there to undergo the process of shaking-out and repotting. If larger-sized plants are not wished for return them to the same sized pots as before. If a plant is weakly grown reduce it to the smallest pot its roots will go into; but if strong and large plants are required shift them to a size or two larger according to the strength of the plant. No plants are more deserving of attention than *Roses* in pots when well grown. They cost very little to purchase in the first place, do not require great heat to force them in early, and are always welcomed. They can be had (if judiciously pruned and grown) in bloom from March to June. By this time *Roses* out of doors are fast opening, and therefore the *Rose* season is greatly prolonged. It is on the summer growth that depends in a great measure their capabilities of blooming next season. A good strong yellow loam mixed with a little decayed manure is a suitable compost for potting all the *Hybrid Perpetuals*, but for *Tees* a little leaf soil and sand is needful. When the potting is completed plunge them to the rim of the pots in short dung or cocoa-nut fibre, and water them overhead frequently when the weather is at all dry. They will then make new and strong growth, and will repay the cultivator another season for his pains.—J. W. MOORMAN.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

KITCHEN GARDEN.

OUR complaint two weeks ago was of cold and wet, and the difficulty of destroying weeds in such weather. There are some sorts of soil in which weeds grow with great freedom, and others where they are much less persistent. Every gardener

knows his own special work and difficulties, but the difficulty of destroying weeds is solved when a person makes up his mind never to allow them to appear above ground. Continual working with the hoe in the spring and early summer months will keep everything clean and promote healthy growth of the crops. Except two slight thunderstorms, during which over half an inch of rain fell, but little more has fallen during the last two weeks, and as the days have been hot with not much dew at night the ground is now very dry, and during the last few days we have hoed amongst nearly all the different crops.

The *Pea* ground has been hoed and the rows earthed-up, afterwards sticks were placed to them. *Potatoes* and *Peas* on the early borders where they have had no artificial protection are later this year than we have ever had them. This may be attributed to the severe frosts which prevailed when the *Potatoes* had grown a few inches out of the ground, and which quite destroyed them. To be sure of *Potatoes*, even by the second week in June, it is quite necessary to place some glass protectors over the plants, even if frosts are not severe enough to show their effects upon the leaves; still they do experience a check from a continued cold nights. The *Peas* will be ready for picking in a day or two, whereas if we had been able to have placed some glass ridges over the first sowing we should have gathered *Peas* by the last week in May.

The hot weather is forcing all sorts of crops on at a very rapid rate, *Califlovers* faster than we can use them. *Asparagus* is abundant and very good; a portion of it has been allowed to grow on while the other part is kept closely cut-in. If *Asparagus* beds are closely cut-in every year until the longest day no wonder if the plants degenerate. Our plan is to let a portion grow away while the other part is cut until *Peas* are plentiful; then the whole of it is allowed to grow away, although an occasional dish may be gathered for two weeks longer. The beds receive much benefit from a dressing of salt and guano in equal proportions. If the weather is dry this may be washed in by a good watering with clear water.

VINERIES.

This has been one of the most anxious seasons ever experienced by us for early-forced *Grapes*. It was our intention to have the early *Muscats* in by the middle of May, and the house was started sufficiently early for this. Never had the wood been better ripened or the buds more promising. The borders outside were protected by shutters, and a covering of fermenting material was placed over the roots. All would have gone on well, but the continued wet baffled us. The water rose in the stalkholes to a depth of 18 inches, and we knew that the roots of the *Vines* were also submerged to that depth; so it was quite certain that to keep-up a high temperature would be doing injunctive to the *Vines*, and they were allowed to grow-on slowly until the waters subsided. Nevertheless, many of the bunches in one house have berries disfigured with black spots, which cannot be accounted for by any other cause than the deluging with ice-cold water from beneath. The *Muscats* of *Alexandria* has not suffered in any way, but *Golden Champion*, *Buckland Sweetwater*, and some of the *Black Hamburgs* have done so. *Duke of Buccleuch*, though a noble-looking *Grape*, has also a tendency to be easily injured. It is a great disappointment to all *Grape-growers* that these two otherwise noble *Grapes* are so difficult to manage. Our own opinion is that they require certain treatment—for one thing, a drier atmosphere than most other sorts excepting *Canon Hall Muscat*, which would do with the same treatment. They might be treated similarly to *Black Hamburgs* until the swelling was completed, and as soon as they took their second swelling we would afford a temperature of 65° at night, with a rise of from 5° to 15° by day. We would allow no water from evaporating troughs, but would sprinkle the walls, paths, and borders of the house twice daily in dull cloudy weather, and three or four times if the weather was bright and the sun shone all day.

Many gardeners, especially those with little experience, do their work too much by square and rule—so much damping-up, and this at certain times, utterly regardless whether the outer air is charged with moisture or the sky is cloudless with a drying east wind. A man who takes an interest in his *Vines* or plants will study their wants, and watch anxiously for the change of a wind from east to west, and will take proper steps to meet it.

Ventilating and firing is equally if not of more importance than atmospheric moisture. The main element of success is to ventilate early in the morning; for instance, in a span-roofed house running north and south the sun is acting upon the glass at this season before 5 A.M., and by an hour later than this the temperature, if the house has been shut-up close, will have risen quite 10° or 15°. We do not say that this will do any harm, but it is better to ventilate as soon as the temperature begins to rise, and to increase the ventilation as the sun rises to its meridian. Most people think six o'clock early enough to get into the garden; if so, we would leave a little ventilation on all night. Thus as to firing. This is scarcely required at all at this season, as the temperature can be kept-up high enough

without it. But should it be necessary when the nights are cold, it is best to do with as little as possible. If Muscate are not ripe and they are required as speedily as possible, the night temperature should not fall below 70°, nor below 65° in the Lamburgh houses.

We are now busy thinning in the late houses, but shall probably finish before this appears in print. So that no lateral growths are allowed to run out after this, but pinch-out the points as soon as it is possible to do so. If the Vines are bearing a full crop there will not now be much growth. If the earliest house has been cleared of its crop let the leaves be thoroughly washed with rain water thrown with considerable force from a garden engine, but not so strong as to cut the leaves into ribbons as we have seen done sometimes.

PLANT STOVE AND ORCHID HOUSES.

The present is a very trying time for plants in these structures. Insect pests will make considerable progress in a few days unless there are plenty of men to attend to everything just at the right moment, which is very seldom the case. Mealy bug, red spider, and green fly increase very rapidly indeed, but it is well to make an effort and have them destroyed before the plants are injured by them. If there is long in the house it will find out the Stephanotis, Ixora, and Dipladenias. These it is well to thoroughly clean, and it must be done with a sponge and soapy water, taking great care of the leaves.

Those who grow large specimen plants for exhibition will now be repotting those which require it, and which have finished flowering. Careful potting is the foundation of successful culture. What is the use of keeping plants free from insects and attending to all the various details of the work if the drainage is defective or the compost not suitable? For large specimens the drainage should be ample and composed of clean potsbricks; over these fibrous peat or loam from which all the finer sandy portion has been shaken should be placed, and the compost should either be sandy loam or turfy peat, each of the tough fibrous top spit from old upland pasture. Possessing these the main elements of success are obtained. Small plants intended to make specimens should be potted-on as they require it.

Many species of Dendrobium, Cypripedium, Odontoglossum, &c., are now starting into growth and are making roots freely. Some of them require repotting or rebasketing, and they are now being attended to. We have often written of the mistake in overpotting Orchids, and it is still not an uncommon blunder. If any Orchid-grower would study the effects of skillful management in Orchids and the use of small pots for the size of the plants they will see it in the nurseries of Messrs. J. Veitch and Sons, Chelsea. Looking over the collections the other day, plants of Cattleyas, Odontoglossums, &c., might be seen making strong flowering growths in 3-inch pots. Particularly fine were hundreds of plants of *O. grande*, with the finest foliage and bulbs ever seen in such small pots. With the aid of without Orchids when the finest varieties can be obtained in healthy plants at the price of bedding Pelargoniums? After the plants have been transferred into fresh pots it is well to keep the house closer for a few days until it is seen that the roots have taken hold of the new soil. We have very frequently described the operation of potting, and will now only say that the work must be done carefully. In many instances it is better to break a pot than it is to wrench a plant out of it when the interior is firmly clasped round with active roots. Just so with baskets. A portion of the basket or the whole of it may be removed, but sometimes it is best to place it inside another one and to allow the roots to work outwards.

Plants in flower ought to be removed to a house with a drier atmosphere, as the flowers become covered with black spots of decay in a close moist atmosphere.—J. DOUGLAS.

TRADE CATALOGUES RECEIVED.

Executors of the late John Harrison, North of England Roses Nurseries, Caterick, Yorkshire.—*Catalogue of New Roses, Dahlias, Chrysanthemums, &c.*

Read & Co., 35, Regent's Circus, Piccadilly, London.—*Catalogue of Garden Watering Machines.*

TO CORRESPONDENTS.

All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Books (*Wasps*).—Our "Garden Manual," price 1s. 6d., free by post.

THE TROUBLES (*E. S. S.*)—Any tinman can make them, and then they can be had of the lengths suitable.

EXHIBITING ORCHIDS (*A Subscriber*).—Although there is a special prize for Orchids, that does not prevent them from forming part of a collection of stove and greenhouse plants in another class.

CLIMBING ROSES (*G. W. P.*)—If you will send your queries here we will have them answered by "A FANSON'S GARDENER."

BLACK CURRANTS FAILING (*T. Fullin*).—The buds you have sent indicate a deficiency in the sap supply. Have a trench between the row of bushes, and fill it daily with water during dry weather.

ALBATROSS SLEAWORTH (*C. J. Major*, Esq., Cromwell House, Croydon, inquires where these can be obtained).

GRAPEB SCALDED (*T. P. K.*)—It is the result of the sudden outbreak of sun exceeding a long period of dry weather. See replies to correspondents on page 450 of our last issue.

CARET-BEDDING PLANTS (*Kittie*).—The best way to preserve Alternantheras is to take up the plants early in the autumn and pot them in a compost of loam, leaf soil, and sand, and winter them near the glass in a warm house. These plants afford plenty of cuttings for striking in the spring; spring-struck plants being preferable to plants struck in the autumn. They cannot be preserved and prepared without heat. Mentha Palegium gibraltarum is hardy, but it has suffered from damp during the late wet winter. It is advisable to propagate it in a shaded place. Lobelia panolis is best sown in September and wintered on a shelf in a light greenhouse. You will find notes on the propagation of Leucophyton Brownii and Kleinia repens in another column.

COLEUSES (*South Devon*).—We think the leaves of the varieties you enclose very good and distinct.

WEEDS ON GRAVEL WALKS (*N. C.*)—Salt strewed thickly on them will kill them, but if the walks have Box edging this is liable to be injured by the salt.

PANSIES (*C. J. B.*)—We cannot recommend any vendors. You should visit the nurseries and select for yourself, or write to some of the successful exhibitors.

CAMELLIA LEAVES SPOTTED (*J. H. E.*)—We think your plants are not in good health, and probably require fresh soil. We should repot them, using a compost of equal parts of turfy loam and peat, with a liberal admixture of silver sand and charcoal. If you can secure active root-action and allow the plants to make their growth in a shaded place, healthy unspotted foliage will be produced. Before potting, carefully remove all of the old soil you can with a pointed stick, not injuring the roots. Afterwards water the plants liberally and syringe them freely until their buds are formed, then cease the syringing, but they must not become dry at the roots any time. If the roots are active spring and place them in a brisk but hot bed, and healthy growth will proceed from every portion of the old wood. By this plan you sacrifice flowers for one season, but you will be well compensated by the increased vigour of the plants and finer blooms in after years. Shade and copious supplies of water are essential in the cultivation of Camellias. We suspect that your plants have had too little water and too much sun.

MILDEW AND RED SPIDER ON ROSES (*idem*).—If you syringe your Roses with soft-soap water occasionally, made by dissolving 2 ozs. of soap in a gallon of water, you will benefit your trees. Frequent syringings with clear water will keep the foliage free from red spider; apply liquid manure also to the roots. Ewing's mildew wash is good. It can be obtained from Messrs. Ewing & Co. at the Eaton Nurseries, Norwich.

ERRATA.—The report of the gardener at Bournemouth contains a clerical error. The diameter of the Libanum shrub is stated to be 4 inches in diameter; it ought to have been 4 inches in circumference; and "Michael," not John Westery, is the name of the fine crimson-coriol standard Rhododendron alluded to.

MEALY BOG ON GRAPEVINES (*E. T.*)—It will kill the insects without injuring the fruit.

EMMETTS (*John Hopper*).—We do not think they eat Rose blooms. Do they not come after green flies? To drive away emmetts a glass sprinkled over their nests will have found to be effectual.

BEETLE ON ASPARAGUS (*C. B. G.*)—It is the Asparagus Beetle, *Crioceris Asparagi*. The best remedy is to hold a gauze bag-net under each plant, shake the plant and destroy the beetles that fall into the net.

NAME OF TREE (*A Constant Reader*).—*Prunus torminalis*, the Wild Service. NAMES OF FRUIT (*E. H.*)—*Limonium grandiflorum*, (*Jussieu*),—1, *Limonium*; 2, *Orchis pyramidalis*, (*C. R.*);—*Cicuta virosa*, Water Hemlock, a very poisonous plant. (*W. W. A.*)—The Dendrobium is probably *Daltonianum*, but the drawing does not show hairiness of the anterior part of the labellum. (*A. Boyle*).—It is a *Sedum*, but the species cannot be determined from such specimens. (*E. Durran*).—We cannot name Roses or any other Florist's flowers from a single specimen. They are legion. The yellow flower was too withered to be identified. Send another specimen in damp moss and a box. (*E. L. CURE*).—Your tree is *Prunus torminalis*. (*E. Knox*).—1, *Ulmus campestris* buds; 2, *C. viminalis*; 3, too much shrivelled. Send another specimen in a box with damp moss. (*Judy*).—1, *Prunus arica*; 2, *Negundo fraxinifolia*.

POULTRY, BEE, AND PIGEON CHRONICLE.

SEASONABLE HINTS.

Do not trust to your memory. Keep a note-book, and use it. Record the common as well as the uncommon occurrences. Do not burden your mind or memory with trifles; keep both free for events. "Sifted into the day is the evil thereof," so jot down the evils of to-day to guard against them to-morrow or next year.

If you make an experiment keep a record of all that concerns it. If it is a success you can then trace all the steps that led to it. If a failure, when you try again you will know what you have to guard against. If you trust the details to your memory the one little item that you will forget will, maybe, be the hinge upon which the whole matter hung.

Keep also a "thankful book," it is so hard to remember favours received. Make the record with pen and ink, that you may always know how much you have to be thankful for; but keep the record of favours done with a lead pencil, that time may blur and finally obliterate the writing.

Before purchasing eggs for hatching inquire as carefully into the character of the seller as into the merits of the birds he owns. If the eggs come by express be careful to note how they are

packed. If shabbily make note of it, also of your doubts of their hatching, if you have any. Write also at once the complaint you have to make to the sender. Do not accept, then complain afterwards. If packed as well or even a little better than you would have done them yourself, and you have confidence in the man you purchased them from, make up your mind that he has done his best, and the cause for failure, if you need to find one, may lie in your handling or in the hen's mismanagement. Think of it. You are going to trust these most delicate of fabrications for twenty-one days to a senseless hen that has nothing but a little instinct to guide her. Is it not wonderful that so many chicks are hatched? Is it not unpardonable audacity that demands or even expects the sitting to be duplicated? Let the seller duplicate the order if he wants to, but do not expect to have two or three sittings for the price of one. Look out for rats! Cats or dogs can be trained to guard young chickens not only against rats, but against stranger dogs and cats.

Feed young chicks often, either with broken grain or with meal scalded. Do not give them meal of any kind wet with cold milk or water. If you buy corn meal for family use sift it, even if it is of best quality, giving the coarser grains left in the sieve to the chickens. Do not allow the bones from the table to be thrown into the dust-bin or to uselessly adorn your door yard. When the time comes to throw them away throw them on the fire, giving the animal charcoal to your chickens. If anything is burned in the cooking do not fret about it; it is only making the charcoal your poultry are in need of, especially if they have had the range of orchard and meadow, and have been obliged after a fashion to pick up their living where they can and of what they can find. Their eggs and flesh are apt to taste. Charcoal in any form will remedy this evil.

At this season while eggs are plentiful and cheap do not trade them off for groceries or use them extravagantly; lay aside a store for the days of famine. Eggs will not keep the pores of the shell remain open. If the egg contains the germ of life it will die after a time and the air will act upon it, causing putrefaction. If the egg is simply clear the air will absorb the moisture, and time will find it a hardened mass. The secret of preserving eggs is in excluding the air, sealing the pores of the shell. This may be done by dipping the eggs in melted tallow and afterwards packing them in bran, layer upon layer, covering the uppermost well with bran, or salt may be used instead of bran, or water saturated with lime and salt is also good. An English lady, an experienced poultry breeder, has preserved eggs in this solution, keeping them for several years without a single failure.

If you have a garden sowing plant sunflower seeds; Mammoth Russian is best—the seed will meet excellent food for your poultry next autumn. The leaves will do very well if saved next autumn when dried for the chickens to scratch among during the winter; while the stalks will, when dried, make the best of light material for starting a fire. If your poultry yard lacks shade a "grove" of these Mammoths will afford it; but protect the young plants from the poultry by covering with brush or protecting racks.

Do not exercise cruelty in trying to keep a hen from sitting when eggs rather than chicks are in request. Better let her take the nest for a few days, she will lay just as soon again. An excellent plan is to tie a rope to one of her legs, fastening the other end of it to a post or stake out of doors in the shade. She will attempt once or twice to return to her sitting, but will soon give it up and busy herself pecking at the rope. At night, after dark, place her upon the roost if it is not convenient to leave her. With us three days at the most has been the limit of such treatment to effect a cure. Give a good supply of food and water.

Let us suppose that each day you extract a drop of blood from each chick, and, say, about two from each adult bird, how much laying, or feathering-out, or growing would you expect them to do? Let us suppose that it was done by a thousand, yes, ten thousand little suckers, one at each point of the skin. How quietly would you expect a sitting hen under such treatment to remain upon her nest? You "would not expect it, would not even think of such a thing;" but you do if you harbour lice upon your premises. Do not compromise matters. Do not permit even one. Do not be tempted into receiving as a gift the best bird that was ever hatched if with it you must accept vermin and you do not know how to get rid of them. One day's work a-month will not do. Keep a guard continually; use kerosene, smoke, whitewash, fumigate, put tansy, or tobacco, or pennyroyal in the nest boxes, sprinkle carbolic powder, chloride of lime, lime or ashes freely. When you have gone through the *role* begin it over again. Too much cannot be said or done upon this subject.

Separate the sexes when the chicks are four or five months old, they will do better apart. Do not feed too much bone meal—that is, the raw bone pulverised, or meat to young birds, unless you wish to hasten maturity at the expense of size. Give your feed regularly if your birds are cooped from it; if you have a garden, remembering that your birds will need their salad next winter, prepare for a supply. A little patch of onions, a few cabbages, turnips, and beets will save you many a dollar when

the snow is on the ground, and will cost you but little of either time or labour.

Do not force your hens to "lay themselves out" by giving too much stimulating egg-producing food, especially if your birds are worth anything. If kept for the eggs for sitting it would be very nice, with orders coming in for eggs at three or five dollars per dozen, to get all that could be had, but what sort of stock can be raised from such forced producing? Would it not be better if it were of less and of natural growth? Feed according to what you want. Corn will not produce eggs, but heat and flesh instead, while wheat contains the albumen which enters so largely into the composition of the egg.—(*American Fanciers' Journal*.)

THE DUTCH RABBIT.

It is now our purpose to describe the smallest variety—the English Dutch and the French Nicard. This variety is pretty, but it is absolutely useless except for nursing, so far as utility is concerned, it being so small, sometimes no bigger than a good-sized guinea pig. The body is well-shaped but small-boned, the legs short and thin, the neck a trifle long, and the head, generally speaking, small with a broadish face; the ears are short and erect, but not so strong in the muscles as those of Himalayan or Silver-Grey, still they should on no account lop, but they should stand erect or fall slightly forward.

In this country but few really perfect specimens are found, although the cultivation of the breed is rapidly increasing and every encouragement is given to their exhibition. In France and the Netherlands, however, the breed is cultivated to an enormous extent, and the number that are annually sent to the London market is exceedingly large. Of course these are no so small as the orthodox show specimen should be, but they generally run from 4 to 6 lbs. in weight. They are reared in large numbers, generally in hives with the temperature slightly heated, and the breeding is said to be exceedingly profitable. One article of food that is much used, and which is believed to be very flesh-growing, is a ball of meal and potatoes dried in the oven and given hard. Sometimes this sort is sent over alive, and if a fancier will frequent the markets early in the morning he can often pick up a couple of well-marked specimens at pot prices. A larger majority are, however, skinned, and sent over in quantities and sold as Ostend Rabbits.

The groundwork of the Dutch Rabbit may be of any colour, black and blue being perhaps the two best, as the most calculated to show off the marking; but grey, brown, and lemon are also common, and in some cases very handsome, although, except in rare instances, the contrast between the two colours is not so striking. Tortoiseshell is much admired by the fancy, not so much because of its beauty as of its rarity, for it is not nearly so much admired as the Black, which is, to our thinking, the colour best calculated to show off the markings to advantage. The modern or "new" style of marking is as follows:—The body and rump of some self colour or tortoiseshell; round the neck a white ring varies in width, but tapers gradually as it goes upwards; from the summit of this collar a white streak travels between the ears and down the face, increasing in width as it descends; the upper portion of the chin is generally white; the top of each foot is tipped with white. The tipping should not exceed an inch in length, nor extend above the first joint. It is not absolutely necessary that the tipplings of the fore and hind feet should be of exactly similar lengths, the front feet being often considerably the longer; but it is necessary that the tipping of each of the pair should be uniform, and we think that most judges would be inclined to lean towards absolute uniformity in the four. This is what is styled the new style of marking, and it is certainly by far the prettier. When a little Black specimen is seen marked to perfection in this style the total turn-out is exceedingly good.

The "old" style of marking, though resembling the new in some respects, is still essentially different. The groundwork is of the whole colour, as in the new style; the collar also is white, but much wider than would be allowed in a specimen of the modern type—so wide is it that it includes the shoulders and the whole of the front legs in its circle. In both styles the ears should be of the darker colour, and no white hairs visible. It should be distinctly borne in mind that any white hairs in the body of the dark colour, if not an absolute disqualification, are a great deterioration from value; in fact, no Rabbit with such a blemish could hope to win in any moderate class. The uncalled-for tuft will, however, make itself apparent occasionally, and unscrupulous fanciers will not hesitate to pluck it out. This practice constitutes the offence of "trimming," one of the most demoralising of the fancy. It is occasionally done in other varieties, especially the Lop, but more often in the breed now under special notice. The objectionable tuft is seized by the thumb and finger and dragged out with a jerk, thereby causing considerable pain to the little animal which is thus operated upon. A good judge will at once distinguish a trimmed exhibit in spite of all efforts to have it concealed, and if he be worthy of his office will at once disqualify it; so that if an exhibitor has

a Rabbit with an unconstitutional appendage in the way of a stray hair of white he had much better leave it as it is, for, setting aside the fact that honesty is the best policy, he may be pretty sure that his pot may win if sent in a natural state, but cannot do so if operated upon.

We have already adverted to the proverbial smallness of the breed. It is not always that a specimen is so very small as we have hinted but a great many are seen at shows under 2 lbs. in weight. Breeding does generally run about 3 and 4 lbs. in weight; 6 lbs. is too large, and in the eyes of most would be also considered so. The small size is produced by in-and-in breeding, a practice that cannot be recommended, because—in addition to lowering the weight, an objection in itself—it also tends to weaken the constitution and generally debilitate the system.

In disposition the Dutch is generally found to be gentle and docile, exception being made, however, in the case of a doe with a litter, in which case she will attack anybody or anything without the slightest hesitation. The Dutch doe is exceedingly prolific, and, more than that, she is a very good mother. The amount of nourishment a little doe will possess is simply extraordinary, and hence they are frequently used as nurse does. A strange, but by no means uncommon, sight is that of a little doe of about 1 lbs. weight bringing up half a dozen little ones, all of which are nearly as large as herself. It is as nurse does that the breed is chiefly valued, although at most shows encouragement is given for their exhibition.—GETA.

NEW BOOK.

"FOREIGN CAGE BIRDS, containing Full Directions for Successful Breeding, Rearing, and Managing the various beautiful Aviary Birds imported into this Country," is an illustrated little volume written by C. W. Gedney, and we recommend it to those who keep foreign birds in confinement. It is a record of the knowledge obtained by long experience. The author says:—"Purchasers of newly imported birds run great risks of loss, even when the specimens are healthy, as the climatic change kills large numbers of those which recover the ill-effects of foul overcrowded cages and dirty water. Birds with bad plumage should therefore be rejected, as should those showing any signs of moulting, for the first change of feathers here is a most critical ordeal to those varieties which have been brought from hot climates. For my own part I would rather have a bird immediately upon its landing than take one which a dealer has had caged in his shop several months. Such birds are all diseased, and they are dear at any price. One of the worst symptoms amongst newly imported birds is tameness, and I commend this fact to amateurs who may venture upon such a risky speculation as to rely on their own judgment and the dealer's word when buying stock."

"I have kept birds under every conceivable difficulty, and during the early years of my life as a sailor those bird-fancying proclivities made me a great nuisance to my messmates. Cape Pigeons, Penguins, Boobies, and Gannets were at various times objects of my great solicitude; but spite of the kindly indulgence of friendly captains I was reduced to the necessity of keeping my pets in the 'chains,' or mizen top, for so great was the prejudice of the crews that they resented the friendly overtures of these birds by throwing them overboard, declaring that they had 'jaws like a pair of shears.' Then I took to Parrots; but this led to official complaints, that the 'watch below could not get to sleep.' Quails were a great success. How I used to take down my 'dickie box' of a morning and revel in the sight of those chubby little fellows trying to scratch the print off an old newspaper, and then demurely make-believe to pick up the tit bits! The loss of those birds nearly broke my heart; they were made into a pie during my watch on deck in honour of a birthday in our mess! It was some time before I ventured upon introducing any successors to the Quail; but the birds of Japan demolished all my good resolutions, and I was once more the owner of a collection which eclipsed all their predecessors."

SWARMING AND NON-SWARMING.

Your correspondent "A. A. Aberdeen," asks for "a few hints on the non-swarming principle." He is doubtless somewhat anxious to know what can be said in favour and against the non-swarming system of managing bees. The question involved is a very important one, which occupies the attention of many intelligent bee-keepers during the swarming season every year. It may be well to discuss the question here with a view to multiply and spread ideas on it; but no one can satisfactorily and finally decide and determine for others whether the swarming or non-swarming system is the better and more eligible of the two. The question so often put—viz., "Which system is the most profitable?" cannot be easily answered, for the utility and success of any system of bee-keeping changes with the weather. Besides, the aims of one apiarian are different from those of another. One wants to multiply swarms and increase his stock; another wants to increase his stores by the multipli-

cation of supers of honeycomb. Some bee-farmers can sell more readily and advantageously run honey than they can sell honeycomb. Seasons, circumstances, markets, as well as the differing aims of bee-masters, have to be considered in this discussion. We have perhaps considered the question as fully and thoroughly as most people for a long period of time. In good seasons the swarming system of management is the best and most profitable to us; in unfavourable seasons the non-swarming system answers better. We shall now notice both sides of the question.

It is natural for honey bees to swarm. Swarming is an instinct of their being, and tends to their health, activity, and preservation. As swarming is natural to them it is an easy matter to multiply swarms in ordinary seasons. We have been frequently told of one or two Italian or Ligurian stocks that yielded five or seven swarms in a season, and that the common black bees are not so prolific. Is it so? Is the comparison or conclusion correct? In hot seasons it is difficult to prevent common English bees from swarming too often. Frequently two swarms, and sometimes more, are obtained from stock hives, and so many from their first swarms the same season. During one favourable season for honey two courses of swarms were obtained from stock hives—that is to say, after the stock hives sent off one set of swarms they refilled their hives with bees and sent off a second series of swarms. But such rapid multiplication of swarms, either of Ligurian or English bees, is no advantage, and affords no proof of the quality or abundance of their queens. Ten swarms from one stock hive would not prove that its queen produces more eggs than the queen of another hive which does not swarm at all. The number of eggs laid by queens (and not the number of swarms obtained from hives) is the only true test of their fertility. I wish the bee-keepers of this country to remember that.

We shall now notice briefly some of the advantages and disadvantages of swarming and non-swarming. In the swarming system we have, or may have, our hives filled with young sweet comb free from the pest of foul brood and not overlaid with pollen. Combs of this description are better for breeding and storing purposes than older combs. Two or three swarms, after filling their hives with combs, gather more honey than a stock hive. Indeed, as a rule, an early good swarm works harder and gathers more honey than a non-swarm. At the end of a fine season the mother hive as well as each of the swarm hives contain, generally speaking, as many bees as a stock hive that has never swarmed at all; and if the best of the three be selected for a stock, and have the bees of the other two united to it, we obtain for another year a stock hive of surpassing worth and power, far more eligible every way for keeping than one which has never swarmed at all.

In the swarming system, too, we have, or may have, young queens in our hives. Queens live four years only, and if they die a natural death the bee-master sustains a loss. If the old queens are not removed from hives and young queens put in their places, five hives out of every twenty will annually become queenless for a time and be greatly hindered in their work. If the queens die at an untimely season when no eggs are in the hives the disaster is as great as it can be—all is lost.

The disadvantages of swarming, as we have already indicated, are most felt in unfavourable seasons. The partnership of a firm, prosperous enough at the time, is broken up with a view to work separately and establish other concerns. A change may take place in the commercial world, causing bad trade and blating the prospects of all the beginners. So in the bee world: A prosperous community mutually agrees to separate as colonies, and thus endeavour to multiply and spread establishments everywhere. They, too, are often hindered by adverse circumstances. In a word, swarms are placed at a disadvantage for a short time after being lifted. The mother hives, too, cannot do as much work after as before swarming till more brood be hatched.

On the non-swarming principle queens go on laying and bees gathering honey without halt or hindrance but what comes from weather and climate. While swarms are furnishing their new homes and commencing life afresh, non-swarmers go steadily on filling their hives or supers with honey. Supers of honeycomb may be obtained from them while swarm hives are being furnished with combs. Supers may be obtained earlier from non-swarming hives than from swarmers.

The disadvantages of non-swarming are many. First, there is the danger of losing swarms. Bees swarm readily with supers on them either empty or partially filled. While supering is resorted to and progressing, no kind of hive yet invented prevents bees from swarming. If first swarms are lost the results of the season will be comparatively small. There is another danger and difficulty with non-swarmers. They become in good seasons too full of honey for keeping. Their combs become loaded with pollen. In every sense they are too plethoric for future health and prosperity. The non-swarming principle can be most successfully carried into practice among swarming hives, by sending a few stocks to non-swarmers, and having them well filled with young combs and bees from swarming

hives with queens not more than two years old, very good, even great results may be obtained in the coming season. No limits can be put to the results of bee-keeping if special efforts and attention be given to a selected set of hives. What has already been done may be thrown into the shade by some future special effort.

But our correspondent "A. A." only asks for a few hints on the non-swarming principle. If we were going to set partly on the non-swarming principle in bee-keeping we would have large straw hives, say 16 or 18 inches wide and 16 inches deep, well stored with bees at any cost in autumn. We would keep them well and warmly wrapped up and covered during the winter and spring months. We would super them on a modification of the Stewarton plan and principle (which has been lately noticed in this Journal), and take the honey from the hives as well as the supers every season. We have always recommended the two systems to go together, for the non-swarming principle cannot be so well carried out in the absence of swarming hives, which furnish an apiary with plenty of young queens and an abundance of bees from honey hives. In our own experience we have found in the swarming mode of management less attention and time are needed, less loss, greater average results—i.e., more profits, and stronger better stocks obtained. If our friend in Aberdeenshire intends to follow the non-swarming system we commend to him the consideration of the Stewarton hive and system.—A. PETTIBREW.

DRIVING BEES.

I AM but a novice in bee-keeping, and know little of the manipulation of the bee-master is every now and again called on to undertake. All my experience about bees is what I have learned from the Journal, and although this is only the second year that I have given any attention to the subject, I think I have on the whole been very successful in all I have undertaken. I have several kinds of hives, but not one of them is on the frame system, and I this year being desirous of trying one of these, I recurred from Messrs. Abbott & Woodbury storifier, No. 12 in their catalogue. When it arrived I set about driving a swarm which had been for a week or ten days in a straw skep, having been hived into it because of the non-arrival of the Woodbury in time for the swarming. I adopted the usual system of inverting the skep and placing the Woodbury upon it, the junction of the two being enveloped by a sheet, as is recommended in the books. I set to work drumming with two sticks on the sides of the skep, and kept on at this amusement for twenty minutes or more, and on peeping in to see the result of my efforts I found not a bee had risen to the Woodbury, but all were in a state of commotion in the skep. I saw it was hopeless to persevere, so I returned the skep, bees and all, to the floorboard, and allowed them to settle down for the night, determining to try again in the following morning. I turned the master over in my mind all the evening, when I was in bed the thoughts of what was to be done on the morrow troubled me, and in the morning when I awoke the driving of the bees was still present in my mind. I had nobody near who could give me any advice on the point, and so I was left to the resources of my own ingenuity.

After breakfast, armed in my veil and gloves, and provided with a table spoon, I sallied forth, accompanied by the old gardener, determined that if the bees would neither be drummed nor coaxed out they should be forced. We turned up the skep, having first taken some of the frames from the lowest section of the Woodbury, and then with the spoon I deliberately lifted as many spoonfuls of bees as I could out of the skep and put them into the Woodbury, which had been previously smeared with honey. As soon as they were housed they set upon the honey and became quite settled and subdued. We returned the frames to their places, and then added the second section of the Woodbury, put on the quilt, and surmounted the whole with the roof. There were still a great many bees left in the skep, and to induce them to join the commonwealth I placed the edge of the skep against the entrance to the Woodbury, and as soon as they found out where their companions had gone they took that direction, and in a very short time the whole of them were seen trooping into the Woodbury, their movements being stimulated by gently tapping on the skep with a stick. The bees are now safe in possession and hard at work, and I flatter myself that by the exercise of a little ingenuity and perseverance, I, though a beginner, have succeeded in what some suppose to be one of the difficult operations in bee-keeping.—ROGER ASHPOLE.

SECTIONAL SUPERS.

REFERRING to "B. & W.'s" article of June 14th, it is evident he has not understood my description and drawing of Root's American sectional super as in the Journal, May 17th. These supers are not four-sided or closed-in on all sides; indeed, excepting the end supers, they have strictly no sides at all—simply

two ends, top and bottom. They are used exactly the same as those "B. & W." describes he is using, and when on the hive each row of sections forms over a long box. There is nothing to prevent the bees massing themselves in sufficient numbers. The sections are held together simply by a strip of paper pasted along the sides, which a knife easily severs when the honey-combs are sold.—JOHN HUNTER, Eaton Rise, Ealing.

OUR LETTER BOX.

BATE AND WEST OF ENGLAND SOCIETY'S SHOW.—Mrs. W. C. Drummond, we are informed, won the first prize for White Cochin hens.

BEES (A Working Man).—The dead bees and droves, also the greases in the paper parcel, are of the common English kind. No Italian mark on any of them. We are glad to learn you have been successful with your bees, and think your success may be traced to the course of management you now follow.

STUNG BY A BEE (B. S.).—To have caused death, the gentleman stung must have been in a peculiar state of health. We have known persons stung by twenty bees in their faces and hands with no other inconvenience than the pain and after-swelling. The best application to a stung place is spirit of hartshorn.

STRAVED SWARM (T. J. R.).—Unless a swarm is followed and had been seen to issue from the parent hive it cannot be claimed.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 49" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Barom. at Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Air.	Shade Temperature.		Radiation Temperature.	
1877.		Dry.	Wet.		Max.	Min.	In sun.	On grass.	
June.	Inches	deg.	deg.		deg.	deg.	deg.	deg.	In.
We. 13	30.093	58.2	57.0	N.E.	61.3	67.9	57.3	98.4	54.3
Th. 14	30.123	64.6	66.1	E.	59.0	70.6	49.1	117.0	46.2
Fri. 15	30.155	74.6	69.0	S.	61.3	77.6	51.0	122.4	47.0
Sat. 16	30.182	68.0	69.9	N.E.	61.8	78.9	49.2	124.8	46.1
Sun. 17	30.098	68.4	61.3	N.	69.2	83.9	52.8	126.2	49.2
Mo. 19	30.444	73.8	63.1	N.E.	64.2	83.4	54.3	128.7	48.6
Tu. 19	30.957	73.7	68.2	N.W.	66.1	84.7	56.9	128.0	43.4
Means	30.089	67.6	63.6		63.8	77.3	52.9	120.8	49.7

REMARKS.

- 13th.—Very cloudy and overcast in morning with drops of rain, clearer in the afternoon, and fine at night.
- 14th.—Fine bright day, but not very warm, there being a gentle breeze.
- 15th.—Another fine bright day, warmer, but not oppressive.
- 16th.—Fine day, bright and cloudless throughout.
- 17th.—Another fine bright day, and absolutely cloudless; hot, but not sultry.
- 18th.—Fine and bright, but a little hazy in afternoon; lunar halo 10 to 10.30 P.M.
- 19th.—Fine and very hot.

A fine warm summer week, temperature above 50° on three days; no measurable rain.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 20.

We have no alteration to notice from last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	0	6 to 0	Melons.....	dozen	8	0 to 0	0
Apricots.....	dozen	1	6	0	Nectarines.....	dozen	12	0	30
Cherries.....	lb	1	0	0	Oranges.....	½	100	0	16
Chestnuts.....	bushel	0	7	0	Peaches.....	dozen	8	0	30
Currants.....	½	sieve	0	0	Pears, kitchen.....	dozen	0	0	0
Figs.....	½	sieve	0	0	Raspberries.....	dozen	0	0	0
Filberts.....	lb.	0	0	0	Pine Apples.....	lb.	2	0	0
Gooseberries.....	dozen	1	0	0	Plums.....	½	sieve	0	0
Cobs.....	quart	4	0	0	Rhubarb.....	dozen	3	0	0
Grapes, bothouse.....	lb.	2	0	0	Strawberries.....	lb.	3	0	12
Lemons.....	½	100	6	0	Walnuts.....	bushel	5	0	0
						½	100	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	dozen	8	0 to 0	Mushrooms.....	pottle	1	6 to 2	0	0
Asparagus.....	½	10	3	6 to 6	Mustard & Cress.....	dozen	4	0	0
Beans, kidney.....	½	100	0	0	Onions.....	bushel	0	0	0
Beet Red.....	dozen	1	6	0	pickling.....	quart	0	4	0
Broccoli.....	bushel	0	9	1	Farsely.....	doz.	bunches	2	0
Cabbage.....	dozen	1	0	0	Garlic.....	dozen	0	0	0
Carrots.....	bunch	0	6	0	Fennel.....	quart	2	6	4
Celery.....	bunch	1	0	0	Peas.....	dozen	0	0	0
Cnew.....	bunch	1	0	0	Potatoes.....	bu-hel	3	6	4
Cauliflower.....	dozen	1	6	0	Parsnips.....	bushel	3	0	0
Cnew.....	dozen	2	0	0	New.....	lb.	2	0	6
Colery.....	dozen	5	0	0	Radishes.....	doz.	bunches	1	0
Concoards doz.....	bunch	8	0	0	Rhubarb.....	bushel	0	6	1
Cucumbers.....	each	0	6	1	Salsify.....	bushel	0	1	0
Endive.....	dozen	1	0	0	Sprucebeet.....	bushel	0	0	0
Fennel.....	bunch	0	8	0	Seakale.....	basket	0	0	0
Garlic.....	lb.	0	6	0	Stallions.....	lb.	0	8	0
Herbs.....	bunch	0	2	0	Squash.....	bu-hel	2	6	4
Lettuce.....	dozen	1	0	0	Turnips.....	bunch	0	0	0
Leeks.....	bunch	0	4	0	Veget. Marrows.....	bunch	0	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 28—JULY 4, 1877.	Average Temperature near London.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.								Mean.
28	Th	Richmond, Fome, Harrow, and Torbay Shows.	73.7	49.1	61.4	3 47	8 19	10 18	6 5	17	2 55	179
29	F	Sudbury Show closes.	73.2	48.8	60.8	3 47	8 19	10 32	7 19	18	3 10	180
30	S	Alexandra Palace and Horsham Rose Shows.	73.1	48.3	60.7	3 48	8 18	10 44	8 31	19	3 32	181
1	SEN	5 SUNDAY AFTER TRINITY.	74.8	50.8	62.5	3 49	8 18	11 54	9 41	20	3 33	182
2	M	Northampton Show. [mittees at 11 A.M.]	72.4	51.2	62.3	3 50	8 18	11 5	10 51	21	3 45	183
3	Tu	Royal Horticultural Society—Fruit and Floral Com.	74.0	50.2	62.1	3 51	8 17	11 15	0 32	22	3 56	184
4	W	Wolverhampton Show at St. James's Hall.	76.1	50.2	63.2	3 51	8 17	11 28	1 15	23	4 7	185

From observations taken near London during forty-three years, the average day temperature of the week is 74.0; and its night temperature 49.5.

EARLY SUMMER FLOWERS.

"Earth, in her rich attire
Consummate lovely, smiled."



THIS expression of the sublime Milton comes back to the mind with peculiar significance at this season of the year when everything in nature is fresh, and bright, and gay. The young foliage of deciduous trees now fully expanded gives back to the landscape that aspect of warmth and richness which departed with the winds of autumn; bright shines the sun; loud, clear, and sweet ring the songs of the birds, and at no season of the year is life in the open air quite so enjoyable as now. But remember that all these sources of real pleasure spring solely from Nature, the handiwork of man has nothing to do with them; and therefore it seems to me that the present time, while the mind is fully alive to such influences, is most suitable for the inquiry, Do you turn from the contemplation of natural scenery to the more refined aspect of your gardens with feelings of real enjoyment—of growing pleasure? or do you, on the contrary, experience a sense of something wanting—of oppressiveness from the dull formal aspect of monotonous lines of evergreens, unrelieved by any bright or softening influence? In the latter case I shall but give expression to your feelings when I say that your garden is not what it ought to be. Now, if ever, when Nature herself is so genial, a garden should abound in beauty, and it is my intention in this paper to show how this beauty is mostly derived from plants and shrubs that are permanent occupants of the garden, and which once established become more and more attractive as they increase in size.

If my readers will accompany me in a stroll about the gardens I have no doubt we shall find many a floral gem, for which I hope to induce them to find space in their own gardens. We are attracted at our very outset by the first opening flowers of that useful Tea Rose Safrano, quite an indispensable variety from the exquisite beauty of its half-opened buds, but so disappointing in the thin ragged appearance of its expanded blossom that it ought never to occupy a too prominent position, for which reason we find it trained upon one of the garden buildings; and it is well that the tree is large and vigorous, for it will undergo a severe backing so long as it affords a flower bud. Mark now a useful lesson here: this Rose, with several other Teas and Noisettes, is trained upon a north aspect to afford a supply of cut flowers in succession to those earlier blooms which we obtain from warmer and more sunny positions, and among such growing upon a western aspect we find Narcissi laden with charming clusters of flowers of great fulness and perfect form, combined with richness and extreme delicacy of colouring, the shading from a golden centre to the most delicate tint of yellow on the outer petals being so marvellous in its perfection and finish as to be really indecipherable. A little further on upon the gable of a building is a flourishing tree of M^{ar}ch^{al} Niel laden with its magnificent,

large, globular, deep yellow flowers. Grand alike in foliage and blossom it most worthily takes rank as our finest yellow Rose, which from its free rampant growth covers a large area of wall-space quickly, and is quite one of the best climbers for a lofty building.

As we pass along we notice occasional examples of double yellow Gorse that have grown from nursery plants of a foot high into large specimens in four years. They have been perfect masses of rich golden yellow for the past two months, producing an effect of such brightness that some care and forethought as to future effects is required when they are planted. With this care it is found most useful, to relieve the monotony of a dense growth of evergreens, to mingle in the fringe of deciduous growth; to plant singly to form specimens among Conifers or shrub masses on extensive lawns; to clothe the sides of deep cuttings with perennial greenery while giving relief to the steep, flat, wall-like aspect of the bare earth; to impart the charm of variety to shrub-growth among bold masses of rock, and to form large clumps to give variety to a landscape. I have only made one large clump, but it has been so much liked that at least two more are to be made next season. This clump, planted three years ago upon the crest of a slope fully exposed, is now some 5 feet high, and quite impenetrable to cattle. When in full bloom it is so bright as to attract attention at a distance of more than a mile; so that if not well placed so as to harmonise with its situation and surroundings it is quite certain to prove offensive rather than ornamental.

Leaving the now faded Gorse flowers, we are attracted by the gay appearance of an artificial bank made to conceal a drying-ground and wood-yard and planted with white Broom, Rhododendron ponticum, Weigela rosea, Lilacs, and pink Thorn. All these are now in full beauty, and with them are mingled thousands of the rich yellow flowers of the common Broom, a spontaneous growth of which has sprung up in the freshly-stirred soil and flourished so wonderfully that their flowers now take a leading rather than a subordinate position; and although imparting a feature which was not intended the effect is really very beautiful—something like that of a Battersea Park flower bed on a large scale. Here let me call especial attention to the chaste appearance of the flowers of the white Broom: borne as they are on long flexible branches swayed by every passing breeze, nothing can be more graceful or striking. They blend well with other shrubs, and also make excellent irregular clumps on the sides of steep slopes. The effect of a few large specimens in clumps of Rhododendron ponticum is very pleasing, not only in the contrast of white Broom flowers with the various shades of lilac and pink which this Rhododendron affords, but in the elegant feathery growth of the Broom springing out of the dense compact greenery of the Rhododendron. An island surrounded by a piece of ornamental water has been so planted, and the effect is so charming that I am induced to draw especial attention to it.

Too much cannot be said in praise of the Weigela rosea, its pink buds and large cluster of apple-like blossom forming an appropriate crest to its green foliage. It is

now in full beauty, as is also the deep pink, or rather crimson variety, *W. Desbois*, a very telling kind when placed among shrubs of brighter hue. The variegated form of *W. rosea*, though not so robust as the green-leaved sorts, yet grows with sufficient vigour to take a prominent position, the delicate pink flowers clustering among the light yellow variegated foliage with the most pleasing effect.

The subject is so seductive that it cannot receive due justice in the compass of a single paper; I must therefore reserve the *Rhododendrons*, *Azaleas*, and other jewels rich and rare for next week.—**EDWARD LUCKHURST.**

FERTILISERS AND THEIR APPLICATION.

VERY willingly do I respond to the request of "G. O. S.," who on page 458 asks for "information of the proper proportions of guano, superphosphate of lime, nitrate of soda, soot, salt, &c., to be dissolved in water—*i. e.*, how many pounds and ounces should be mixed in ten gallons of water, how many square yards of ground that quantity should be applied to, and what crops will beneficially absorb the ten gallons of water."

I cannot, perhaps, answer these questions so clearly and categorically as they have been submitted, yet I may possibly refer to them in a manner which may be useful. I have had much experience with fertilisers, and feel that I could not have discharged my duties successfully without them; but I must candidly admit that I have never been at the trouble of weighing them by ounces and pounds, and apportioning a given quantity to a certain crop or area of ground. Long use with fertilisers enables them to judge by intuition as to the right quantities to apply—these quantities being governed by the state of the crops and the condition of the soil. Let me give an instance of this, and which also affords proof of the value of liquid manure.

During the autumn season of 1868 there was scarcely any rain from April until August in the district where I was then engaged. The soil was light and porous, and I was satisfied that much water would be necessary to support the crops. In the first place, to enable the water to be applied effectually the crops were sown and planted in trenches, and in order that it should be additionally sustaining it was fortified with guano and common salt—guano to afford support, salt to promote coolness and to cause the moisture to be retained. A large old brewing tub was placed as near to the crops as possible, and where it could be reached by the water-cart. This tub would hold about a hundred gallons. When it was filled a large shovelful of guano was mixed with it and less than half that quantity of salt—say 10 to 12 lbs. of guano and 3 to 4 lbs. of salt. This was stirred and applied immediately to the crops, pouring it in the trenches as long as the soil could "take it." I cannot say how much was applied to a square foot of ground, but I am certain that in the case of Peas and Kidney Beans it would exceed a gallon. As soon as possible after watering an inch of dry dust from the surrounding soil was spread over the moistened surface to arrest evaporation. I had no manure, but the dust answered capitally and kept the roots quite moist for a week. Every crop, therefore, had a thorough watering once a week and no more. The result was that I had a full supply of vegetables during that long-to-be-remembered year when many gardens around me were parched and barren. No mildew appeared on the Peas, which I attributed, and still attribute, to the salt: no disease appeared amongst the Potatoes, and no grubs amongst the Onions and Carrots. The salt-and-guano solution was applied to all crops in the kitchen garden, to fruit trees and to flower beds, and not in one instance did it fail to benefit.

That narrative of experience does not, however, answer the questions of "G. O. S." as he desires them to be answered; I will therefore say that 1 lb. of guano and a quarter of a pound of salt dissolved in ten gallons of water will be a safe strength for applying to all crops which are established in the open ground, and it may be poured on (which is the only effectual mode of watering) as long as the ground will "take it," afterwards covering the surface, if possible, with dust, manure, or some other mulching material.

The next question your correspondent requires to have answered is in reference to superphosphate of lime and nitrate of soda. Let him mix 1½ lb. of the former and a quarter of a pound of the latter in ten gallons of water, and he will have a solution not easy to be surpassed for any established open-ground crops which require support. Pour it on as long as the soil absorbs it freely.

As to soot and salt for ten gallons of water, my plan of making would be to tie about three quarts of soot in a piece of old canvas and suspend it in the water for three or four days, and add also a quarter of a pound of salt; or, if that process were to slow I should moisten the soot—making into a mortar, and then thoroughly mix it with the salt water. That solution cannot be applied wrongly to any growing crops, it will benefit all requiring support in dry weather.

I have now answered as well as I am able all the queries submitted by "G. O. S.," except the measurable quantity to apply to so many square yards of ground. I cannot answer that question to my own satisfaction. I can only say that I have never hesitated pouring a gallon on a square foot of Celery row, Pea row, or Onion bed if it passed away freely; but often half that quantity is sufficient, according to the nature of the soil and the state of the crop.

That may be considered an extravagant manner of applying manure, I will therefore tell how the fertilisers may be economised. It is very simple. First, nearly saturate the ground with clear water, and then apply immediately half the quantity of liquid manure that you would give had no pure water been used. Fully half the manure is then saved, and about the same benefit is, I think, imparted to the crops. When soil is very dry much of the liquid manure passes through it and past the roots of the plants. Scientific people have told me that this is not so, but I do not believe them. I have great respect for the laboratory of the chemist, but greater for the laboratory of nature. I know if guano water is poured on the soil in a flower pot when that soil is quite dry, that guano water passes out of the aperture of the pot in a moment; but if guano water is applied to a pot wherein the soil is moist the superfluous water passes away in a clear state, so that moisture certainly increases the power of the soil in appropriating the virtues of manure. This fact has, I believe, been turned to account by Mr. Cannell, who has made provision for collecting the water which passes from the pots and using it over again, and which he considers superior to fresh clear water. The most economical way, therefore, of using liquid manure is to apply it when the soil is moist.

The strength of the liquid manure above mentioned is only suitable for established crops in the open ground. Crops which are not established—that is, crops recently planted, do not require such liquid; and to plants in pots it should only be applied at a quarter or half the strength named, according to the nature of the plant and its condition. A *Chrysanthemum* can take stronger liquid support than a *Geranium*, a *Geranium* than a *Primula*, and a *Primula* than a *Camellia*.—**A RETIRED GARDENER.**

ROSES.

To write of Roses during the time that they are in full bloom may seem to some superfluous, but not so to the Editors of our Journal, nor to many I hope and think of its readers. For what can be more appropriate than that everything should be in harmony at such a time as this? Before these lines see the light the Crystal Palace Show will be a thing of the past, and Exeter and other places will have held their shows. Let us talk, then, of Roses, read of Roses; let us drink (those at least of us who are still non-abstainers) *La Rose*. We cannot well go on and recommend Rose leaves as articles of food, for here at least we require more substantial diet; but let the Rose fill all our thoughts during her brief season of blooming, and whatever else we do let us love our Roses.

This has been a very trying season indeed for Roses, and I do not know any one where we have had more difficulties to contend with. I have had letters from large growers in all parts of the country, and they all say the same thing—no growth. The cold spring kept our trees back at the growing season, and now the fierce heat of summer has come down upon them and is swelling the buds before the shoots have had time to grow. I have Roses in all aspects and under all conditions, and the only plants (for my Roses are not "trees") that are doing at all well are those that are sheltered by some hedge. My main rosery, which is in a very good position but a little exposed to the east, is very backward, and the Hybrid Perpetuals will not give me a bloom for the show. I am strongly of opinion that where practicable it is highly advisable that Rose plants should be placed in different positions in the garden. I am sure, if it were not for my adopting this plan, that year after year I should have been left without blooms of some of the most famous sorts, notably *Xavier Olibo*,

Louis Van Houtte, Marquise de Mortemart, and other weak growers. My experience proves to me that these sorts will not grow at all unless in some sheltered spot.

But the longer I grow Roses, and the more I travel to show and visit various nurseries and gardens, the more am I convinced that certain Roses of the Hybrid Perpetual class will only succeed in certain soils. The Roses above named will not grow with me; even with the shelter I name they only just manage to exist. I purchased last autumn fifty dwarf plants of Xavier Olibo, and there are now only about six alive, and these are on their last legs; while such a Rose as Edouard Morren, which so many growers complain will not open with them, does splendidly here. Yet many of the Roses I have named are classed in the catalogues as vigorous growers.

I feel convinced that the best way we amateurs can hope to succeed at the shows is to find out from experience what Roses do well with us and what do not grow freely, and then to discard the latter altogether and cultivate the former in large numbers. There are always good substitutes to be found for any Rose which will agree in form or colour, and sometimes both. For instance, take Marquise de Mortemart. I had at least fifty or sixty plants of this variety last year, and I had only one bloom all the summer. It is, then, hopeless to grow such a Rose here; but I have a lovely white Tea Rose called variously Madame Bravy, Serot, or Alba Roses, which succeeds splendidly here, and this is quite as good in a stand between a bloom of Charles Lefebvre and Marquise de Castellane as would be the other. I own that dark Roses such as Horace Vernet, Louis Van Houtte, and Xavier Olibo are difficult to replace, but here Jean Cherpin often gives good blooms. I electrified Mr. Baker with one bloom of this variety last year, and even such a comparatively unknown Rose as Black Prince or the better known Baron de Bonstettin will sometimes give me a bloom which will answer my purpose. For years I have struggled to grow these lovely but weak-constituted Roses, and for years I have spent my money and time and patience all in vain; and now if after one more trial on a stock which I have not yet made use of—viz., the seedling Briar, they still refuse to grow here, I shall give them up as hopeless.

This year many of the Teas have done splendidly, particularly Souvenir d'un Ami and Rubens. This season, too, has suited Mondère and Niphotos, but Marie Van Houtte and Catherine Mermet have not been up to the mark here at all.

Let me warn all your readers against a most arrant impostor—viz., Marie Guillot. This Tea grows freely, has numbers of buds (I have it here on dwarf and standard with east and south aspect), but not a single bud will expand.

If ever a season was in favour of Roses the buds of which are hard and difficult to open it surely is this. I never saw Monsieur Noman half so fine as he is here this year, and all rosarians know what a fair-weather sailor he is.

One of your correspondents reminds me that I have not mentioned Gloire de Dijon as a grand grower. This variety rarely gives me a bloom fit to place in a stand, so that I do not cultivate it largely, but I am bound to say that last Sunday I had one of the finest blooms I ever saw in my life; and I humbly beg that Rose's pardon, and all those rosarians too whom I have offended by my railings against it, for I see now by experience that sometimes Gloire de Dijon will give you a bloom that you may safely place even in your back row. Though the Rose has been out four days it is as fresh as ever, and I send it to you in the hope that it may reach you so that you may at least see the form. It is indeed rare even for Gloire de Dijon to have any form when expanded but flat and coarse, but here you will see there is a real globular form. [Yes, very fine]. The same correspondent asks me a question as to the growth of Duke of Edinburgh. With me that Rose grows freely, not strongly, for the habit of the Rose is somewhat slender and pendulous; but Mr. George Paul's grand Rose is always a good free grower. For colour and the same class of Rose I would recommend your correspondent to grow Mr. Paul's novelty Sultan of Zanzibar. This is a very great acquisition, and so far as I can judge from one Cheebunt plant a grand grower.

I have been much interested in "A HEREFORDSHIRE INCUMBENT'S" letter. It is certainly most true that we rarely see Charles Lefebvre, or John Hopper, or the old General so good as they need to be, and his reason seems the best of any I have heard advanced. I never for one moment thought that the love of Roses was growing cold, but only asked if the desire for Rose shows was not abating with the general public; and I

still fear that it is so, and I think Mr. Bulmer of Hereford's experience will bear me out.—WILD SAVAGE.

FRUIT BLOSSOM NOT SETTING—INCIPIENT FRUIT DROPPING.

ALTHOUGH much blossom was produced little or no fruit is to be seen in many gardens. The cause of this may be found in the long-continued cold dull weather, and frost prevailing during the blossoming period. Projecting copings and canvas or other coverings have been in many cases equally ineffectual in preserving the blossoms, yet I can record instances where protection has been useful. I have some Apricot trees against a south wall. Two-thirds of these trees—Moor Park, Royal, and Blenheim—were protected and one-third were exposed. Upon the unprotected trees there is not any fruit, whilst the protected trees are carrying a sufficient crop, the conclusion arrived at being that Apricot blossom is liable to injury from frost much in the same way as shown by "V." in respect of Apple blossom at page 399. Though frost or cold injuriously affects, and in some instances destroys, fruit blossom, yet, as pointed out by Mr. Douglas, there is some difference in the hardness of blossom, not only as regards different fruits but as respects varieties of the same fruit. There is also great difference in the hardness of blossom of the same kind, due entirely to position. A tree may blossom early from being in a warm situation and have the blossom destroyed, whereas another tree in a higher more exposed situation may escape injury. Yet apart from the positions they occupy, trees vary much in the hardness of their blossom and incipient fruit, which I hope to note in a subsequent communication.

Much of the disaster to the fruit crops this year rests not more upon the cold of the present season than upon the cold, wet, unless weather of last autumn, which was very unfavourable to the ripening of the wood. I confess to never before having paid so close attention to the blossom of fruit trees as this season. The appearance of the blossom of Apricots, and afterwards of Peaches and Nectarines, struck me as singular. Many of the flower buds did not expand but dropped off when showing colour, and these buds were on the front of the branches, and for the most part were confined to the strongest and longest growths of the previous year. Upon dissection these buds had healthy stamens and anthers, but the pistil was very puny, frequently twin, and devoid of ovary. The expanding blossoms, especially those on the front of the branches or furthest from the wall, were very short, the petals small, the stamens twisted and curled outward away from the pistil instead of rising boldly over it, the anthers devoid of pollen, the pistil small and short, its stigma not viscous, and at its base no ovary. They were barren. These remarks apply equally to Apricot, Peach, and Nectarine blossoms. What fruit there is, is borne quite close to the walls, and in the Apricot upon the short spurs only, and in the Peach and Nectarine upon the short-jointed wood only. I anticipate that all the incipient fruit of the two latter will drop, a not un-frequent occurrence when the wood is imperfectly ripened, the fruit falling when the size of a pea or larger, also when the stoning period approaches.

Very slight climatic change is sufficient to cause failure. The Apricots I have on a south wall have fruit—an ample crop, but those on a south-west aspect are an almost total failure; yet one tree is notably weak, having made last year very stiff short wood, and this (Kaisha) has made fruit.

In the matter of Plums and Pears, which with Cherries are the only other fruit grown against walls, and in every instance the most vigorous fruit trees are those most deficient of a crop of fruit, not that there was a paucity of blossom, but they suffered most from the cold. Would they have set and retained the fruit to maturity if the weather had been favourable? I think not, for the trees with stiffer shoots and shorter spurs have set and retain the incipient fruit. The case is not dissimilar with bush fruit. The kinds growing most freely—having made much wood last year—have in the case of Gooseberries dropped the fruit, whilst those having made little wood, but having formed spurs instead, are loaded. Currants are masses of fertility. They made very little wood last year, and when this is the case light and air obtain access to the foliage.

It is always pleasant to record a success. It is equally instructive, if not more so, to point out a failure, especially if we see in it means of its future avoidance. What more to the

point than Mr. Gilbert's terse article on "Apricot Failure—Pruning," at page 419? Close pruning has enabled him to record a success when a majority have nothing to tell of but failure. No better evidence could possibly be given in favour of the "short-spur young-shoot system of pruning Apricots." Those who have practised the two systems—i.e., long-spur and short-spur practices in respect of Apricots, will coincide with Mr. Gilbert's excellent remarks. I thank him. The best possible means of preventing failure in setting fruit blossom and the incipient fruit dropping is to secure the thorough ripening of the wood. It is of more consequence than protection from frost in spring, for, however good in itself, protection in spring can hardly make good the defects of last season—imperfectly ripened wood. I remember a Peach wall being covered with glass in winter in the hope that the blossom would set safely. The chagrin of the owner was great—the trees set fruit badly; but the increased warmth and immunity from autumn rains secured the well-ripening of the wood, a heavy crop being the result in the following year.

Too much stress cannot be placed upon the injunction to keep off insects. If the foliage be kept healthful it will better cater for the buds and spurs that bear blossom in the coming season. Nothing short of this can be expected to give well-ripened wood and plump well-developed buds.

Another very important consideration is that of admitting light and air—exposing the foliage to the sun's influence, not keeping the spurs of pyramidal trees any more than trees against a wall crowded and overshadowed with useless spurs, but by early and constantly attending to stopping secure for the prospective fruiting parts full exposure, so that the leaves which cluster around the base of a bud may have the sap duly elaborated, the wood rendered firm, and the buds perfected. A tree may of course be closely pinched, and yet from overcrowding of the spurs or shoots be in a worse plight than an unpruned, unaided tree—a very common case with Peach and Nectarine trees, the shoots being laid-in so thickly that the leaves overhang others beneath them. Some leaves are exposed partly or fully, but a majority are shaded; hence the sap is imperfectly elaborated, and the consequence is that the blossoms drop without setting, or fall when in the incipient-fruit state. When the wood is thin, every leaf receiving a full share of exposure, the buds attain to an equality of development, and scarcely any blossoms fail to set.—G. ABBEY.

JUDGING ROSES.

The subject of judging Roses is a difficult one to define on paper, nevertheless it is one of great importance to exhibitors, and should be more accurately defined than it has been of late years. Under the old method of judging Roses by the points of shape, size, and freshness I have found it difficult to give the true numerical value to these single points or qualities, so dependent are they upon each other when in the exhibition stand. For instance, size might be counted by two points, but unless combined with shape it is not of that value, being coarse and worthless; then, again, shape if valued by three points would be incorrect without size; while freshness must be everywhere present, or all the other points would be marred.

The way in which I have been accustomed to judge Roses for many years, though savouring a little of the rule of thumb, will, I think, be found useful to beginners in the art and mystery of judging the queen of flowers, therefore I will endeavour to give the value points.

Every good exhibition Rose must have three qualities—shape, size, and freshness; these may be represented by the one term "good." Now, you may often see at a glance over the stands about to be judged which is first; but it is, nevertheless, best to go over your stands, roughly noting down those which have the greatest number of good flowers, and bringing two or three of the stands together for general comparison as well as for closer judging. You will then critically examine the good flowers in these best stands, dividing them into three classes, which for convenience may be noted as:—Good or X, two points; extra good or XX, four points; and XXX, or six points. The first I have described; the second class, or XX, are selected from among these good flowers as possessing superior outline with size and quality of petal, high full centres with good colour (not dull or muddy), fragrance, &c. You will then have an easy task to run the eye over the whole and crown a few of the grandest high-centred prominent flowers with XXX. This last effort encourages the production of these grand high-

centred Roses, the glory of our stands and the focus of every good exhibitor's eye.

I have hitherto only treated of the good Roses in these three best stands under censorship. You will observe there are two other classes, happily small in our present exhibitions—bad (O) and medium (I). The bad are damaged or stained, often the finest flowers unfortunately: one-sided, ragged with bad outline, showing an eye, too small—under 2 inches in diameter—rough and hollow. These you must blackball. The medium Roses are small, but well shaped; large, but with hollow centres; poor dull colour, though good in other respects; and all under-sized flowers not up to the standard previously given as good. To these one point is given. I would add another remark to help the tyro in difficult cases where a long-trained comparative and discriminating eye and memory cannot well be relied on. Provide a number of small strips of card, printing on them the letters $\frac{X}{2} \frac{XX}{4} \frac{XXX}{6}$. Then, as the censors judge each flower by the above rules, place its value card by it. These may most quickly be gathered up and counted by the secretary.

In the winning stands it is necessary to see that no two Roses of the same kind are staged through incorrect labelling. While a single specimen incorrectly named might be winked at by the judges, the same Rose under two different names would disqualify it. If the prize is for "distinct" varieties, two Roses named as Exposition de Brie and Ferdinand de Lesseps, Climbing Devonensis and Old Devonensis, Alba Rosea and Madame Bravy, &c., cannot be admitted in the same stand.

Very much more might be written on this all-important subject to the exhibitors, and I hope for their sakes the Grand National Rose Committee will thoroughly take this subject up. I will not tire your general readers more, but subscribe myself—Devon.

BRITISH QUEEN STRAWBERRIES IN A COOL VINERY.

I SENT you last season a note detailing my treatment and success in growing British Queens in a cool vinery. As I have again succeeded at least equally well I think it may be of service to my fellow amateur gardeners to give the result of this year's experience. The British Queen is, I presume, admitted at all hands to be the best of our Strawberries when grown in suitable soil and climate. It does well with me in the open ground. I grow berries equal in size and flavour to any I have ever seen elsewhere; but it is under glass that my success is greatest. I think I mentioned last year that from eight dozen pots I gathered hundreds of berries—I am sure I may say from two to three hundred, weighing each a full ounce, and not a few that turned the scale at $\frac{1}{2}$ oz., and these of a flavour, colour, and fragrance I have never seen equalled. This year the berries, equally good in all other respects, have not been quite so large, though many weighed a full ounce. This I attribute to the fact of my not having thinned so closely. Last year I left on the average six berries to each plant, this year I allowed to ripen from eight to twelve. I brought in the first on May 6th, I finished June 11th, gathering nearly every alternate day from one to four dozen handsome fruit. I observed stated in the Journal that during two weeks of that time Strawberries were selling in Covent Garden at from 6d. to 1s. an ounce; and as mine were certainly first-rate, had I been within reach of the London markets I might have realised a small fortune. I believe, however, I have been better pleased in affording an occasional treat to half a dozen invalid friends and in feasting my wife.

Now, though in the Journal and elsewhere I have seen named different varieties as desirable for cultivation under glass, mention is seldom made of the British Queen. Therefore I send you this statement with the hope of encouraging others to follow my example. The trouble of cultivation is not very great: suitable soil may be formed anywhere; and success, so far as three years' experience can assure it, is certain.—C. A. B., Sandown, Isle of Wight.

[We have grown this good old variety in a similar manner to our correspondent, and the produce was highly superior and much esteemed.—Eds.]

RENDLE'S GLAZED HOUSES.

Few men in the world of horticulture were worked harder than Mr. Rendle, and few horticultural buildings have had

such abuse as his. I was told when erecting them hers that the first high wind would blow out half the glass, and the straight lugs would allow the house to be flooded during heavy rains. However, no glass has moved, and I can testify that I as well as my foreman have watched the roof on wet days, but a single drop we never saw. Watertight houses alone are worth something.

The house roofed is a vinery, the Vines in which are sixty years old. They have always borne fair marketable fruit, so that they are retained. The Grapes, principally Hamburgs, are now fast approaching maturity, and if it were the custom of the Royal Horticultural Society or Messrs. Veitch & Sons to award prizes for whole vineries instead of for three bunches I fancy that the garden at Burchley would be decorated.—R. G.

THE CRYSTAL PALACE ROSE SHOW.

"The Great Rose Show," "The Show of the Year," "The Blue Ribbon of the Garden." Such are some of the terms which rosarians once employed when speaking of this Show, but this year how is the scene changed! When I arrived at the far-famed building I found empty boards and exhibitors to be counted on the fingers. "Ten little niggers" indeed, I said to myself as I set to work at my boxes; and soon if the Palace people continue to fix days for their shows irrespective of weather, heedless of exhibitors' warnings, negligent to a really culpable extent of financial considerations in limiting both the number of prizes and the value of them, there will not be ten, or nine, or one exhibitor. On this occasion, in spite of all warnings, of remonstrances, and of earnest expressed desires which the would-be exhibitors addressed to the General Manager, the Directors refused to alter their day, and the Show was of course a failure. How could it be otherwise? When Mr. Baker, who lives in sunny Devon, could not show; when I from Dorset was only able to show twelve trebles, twenty-seven of which blooms were Teas; when Messrs. Curtis, Cranston, Cant, Prince, Keynes, Fraser, and a host of others could not show, can it be wondered at that in the place of famous stands bare boards were to be seen? The amateur exhibitors consisted of Messrs. Jowitz, Ridout, Davis, Chard, Hollingworth, and myself; the nurserymen of Messrs. George Paul, Charles Turner, Mitchell of Pitt-down, and Piper. Instead of words of admiration and delight only exclamations of astonishment and regret were heard that the day had not been changed. In our minds was the Saturday next to Midsummer-day (the usual fixture of the Palace) may be the best of all days, but it is very seldom; and the Directors, or General Manager, or whoever it may be that fixes the day, may take it for granted that the last week in June is quite early enough.

And now, having relieved my mind of this grievance, let me turn to the Show. There were some very good blooms there no doubt, and considering the year and the lateness of the season it was astonishing how so many varieties could be brought together. The nurserymen's seventy-two were very fair stands, but no more to be compared with what they were last year than is a wild Rose to a Maréchal Niel. The stands were fresh and the colour was fair, but the blooms were very uneven. What we have been accustomed to see at these great shows in a nurseryman's seventy-two is an even lot of grand blooms all through the stand, only broken by a lovely Tea here and there introduced for the sake of contrast; but on Saturday it was impossible to look at any box without finding a small, or a rough, or a dull bloom. Mr. May of Brdale, Yorkshire, showed seventy-two Roses which he cut entirely from under glass, and considering that fact they were fine. To these were awarded the first prize. But may I be allowed to point out that dullness of colour and a general washed-out look about the blooms ought to be as much against a stand as any roughness, or unevenness, or any other blemish? Mr. May had certainly some very fine blooms, notably Madame Thérèse Levet, Madame Lacharme, Lelis, and May Turner; but there were some very coarse overblown blooms in his front row which to me, at least, entirely destroyed the symmetry of his stand. However, he came a long way, and did a wonderfully plucky thing, and no one will grudge him his great success. Messrs. Paul of Cheshunt were second. Well, Mr. George Paul was not up to his old form, but he was in good company; he brought with him at least the "brightness of Cheshunt," and much needed it was at Sydenham, also the Marchioness of Exeter. I beg my lady of Burchley's pardon, but I am alluding to a Rose named after her. And from Africa's sunny shores he produced the Sultan of Zanzibar. Of older varieties he showed one or two marvellous blooms, notably his own Cheshunt-raised Rose Princess Mary of Cambridge. "Just the weather for Princess Mary," said the exhibitor, and so it has been, but I doubt if, whatever the seasons may hereafter be, I shall ever see another such Princess Mary. Monsieur Noman, as all rosarians will well understand, grand here and throughout the Show. Once more true to his colour, Mr. Paul again electrified us with his particular pet Centifolia Rosa.

He also in his forty-eight showed remarkably fine trusses of that old and rarely-to-be-seen variety, Jesso Cherpin. It is a little strange that the weather which suited so well Mons. Noman and Marie Couinet should also have been favourable to that capricious Rose the "Auld Jinerai," as the Yorkshiremen call Général Jacqueminot, which was very fine, as was the despised Julie Touvais. In fact, Mr. Paul's stand was full of surprises. He showed a marvellous bloom of the novelty La Ronière. This is a very dark Rose, quite as deep in colour as Jean Cherpin or a fine Camille de Rohan, and I do not think many amateurs as yet have it. I think it will prove a great acquisition if it turns out to be a good grower.

Mr. Turner's seventy-two also contained some very fine blooms, notably one of a Rose which he introduced about seven years ago—Lord Napier. He had a splendid Maréchal Niel in his stand which did wonders for it, also very fine blooms of the little-known Souvenir de William Wood and La Française. The former of these is very dark; the latter a blush rose, somewhat like (in form and colour) Madame Vidot. His Madame Lacharme was magnificent, and bitterly do I regret ever having written a word against that pure white beauty. Mr. Turner also had a very good bloom of the novelty Duchesse de Vallombrosa; and all I see of this Rose confirms me in the belief that in 1875 one Rose at least was sent out which will always be esteemed as a grand exhibition Rose. Mr. Turner had also some very fine Teas in his stand, including Niphetos and Souvenir d'Elise, and, strange to say, Marie Guillot; but this Rose came from in poor, and Mr. Turner, jun., agreed with me that it is too double to open out of doors. A third prize was awarded to Mr. Turner.

I must not omit to notice Mr. Mitchell's (Pitdown Nurseries, Maresfield), seventy-two, to which was awarded an extra prize. He had some beautiful Teas in this stand, one of which I neither grow nor know—viz., Jean Pernet. This is a light creamy yellow, deepening in the centre something like Perle des Jardins or a small bloom of Cloth of Gold, the only bloom of which variety was in the button-hole of "D., Deal." Mr. Mitchell's Marie Van Houtte, Alba Rosea under the name of Julie Mauvais, and Comte de Paris were very fine; but his Hybrid Perpetuels were uneven, though he had very fine blooms of Edouard Morren, Mlle. Thérèse Levet, and Fisher Holmes.

In the forty-eight trebles Mr. C. Turner was first and Messrs. Paul & Son second, and for twenty-four trebles Mr. Piper, Uckfield, and Mr. Meadmore, Romford, Essex, were placed first and second respectively. I need not go through the blooms in the trebles, as the same varieties which were conspicuous in the seventy-two were to be found equally good in the trebles, but I will pass on to the Teas and yellow Roses. These were neither very good nor numerous. Mr. Mitchell was first in the class for twelve varieties, and Mr. C. Turner second. Mr. Mitchell's twelve consisted of Maréchal Niel, Jean Pernet, Madame Willemoz, Souvenir de Paul Neron, Marie Van Houtte, Elise Sauvage, Josephine Walton, creamy white, good; Bongré, fine; Julie Mauvais, lovely; Madame Margotin, and Cheshunt hybrid—a very attractive stand. Mr. Turner had Mons. Fortado, Belle Lyonnaise, Marie Van Houtte, Catherine Mermet, President, Maréchal Niel, Cheshunt Hybrid, Lamarque, Madame Falcot, Rubens, and Gloire de Dijon.

Messrs. G. Paul & Son were first for Roses of 1875 and 1876, among which in fine form were to be seen their own seedlings Emily Laxton and Marchioness of Exeter. Mr. Turner was second; the best Rose he showed throughout his stand was his own seedling, Royal Standard. This has both good form and a soft rosy pink complexion. If it has fragrance like my namesake (which was not so good to-day as it ought to have been; perhaps Mr. Turner expected to meet me, and was careful not to hurt my feelings by drawing too unfavourable a comparison between the "WILD SAVAGE" in the Bush and his Rose), it will be a great acquisition. He showed also several bushes full of Royal Standard. For six trusses of any Rose of 1875 or 1876 Messrs. Paul & Son won with Marchioness of Exeter, Mr. Turner being second with Miss Hassard, which was rather too expanded.

And now let us turn to the little folks of the paragon and the country home. We saw but little in comparison with the giants, but we do our little best, and the choicest blooms we have we cut without a murmur. In the class for forty-eight there were two exhibitors. In thirty-six I believe only three. In twenty-four trebles only two, and in twelve trebles just three. Hear it, ye great men of Devon and Essex—you who conquered ten times these numbers last year—for the Crystal Palace amateurs to be counted in units. Well, it had one advantage—we most of us won something, and very few had to go suppers to bed, and we cannot say that often after Rose shows. Mr. Davis, Wilton, Wilts, was first for forty-eight single blooms with a rather small lot of blooms, and Mr. Chard, Clarendon Park, Salisbury, second. Mr. Jowitz, The Old Weir, Hereford, was easily first for thirty-six blooms with some very fine Roses. He had the most exquisite bloom of Belle Lyonnaise I ever saw, and Madame Fortado, that shy beauty, which he cut from a maiden (the only way of blooming her). Mr.

Hollingworth, Turkey Court, Maidstone, was placed first in the class for twenty-four trebles. The blooms were rather irregular, and his stand contained a Rose which he called *Clementine Victor Verdier*, but he also showed *Victor Verdier*. As the two were identical in colour and form it is humbly suggested that *Clementine* is a refined way of spelling *climbing*. He had beautiful trebles of *Devoniensis*, *Souvenir d'Elise*, and *Madame Thérèse Levet*. Mr. Davis, Wilton, had the second prize.

And now I have done, and have endeavoured to bring before rosarians who have not seen the Show some of its salient points. On Wednesday the 4th of July shall have a show and no mistake, but I doubt much whether *Roses* will be in full bloom before that day.—WYLD SAVAGE.

Our able amateur correspondent has done well, and has left very little to be said in the *Rose* classes. He has, we presume purposely, omitted mention of Class 9, for twelve varieties, three trusses of each. The winners in this class were Mr. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, and Rev. J. B. M. Camm, Mouckton Wyld, Charnmouth. Mr. Ridout's blooms were the most fresh and regular of any in the Exhibition. They consisted of *Edouard Moreau*, *Beauty of Waltham*, *La France*, *Duke of Edinburgh*, *Thérèse Levet*, *Marie Baumann*, *Abel Grand*, *Charles Lefebvre*, *Marquise de Castellane*, *Madame Victor Verdier*, *John Hopper*, and *Reynolds Hole*. All the blooms were good, a few excellent. Mr. Camm's blooms were all of the best except three—*Mons. Nonan*, *La France*, and *Etienne Levet*. The Tea consisted of *Belle Lyonnaise*, *Perle des Jardins*, very bright; *Souvenir d'Un Ami*, *Catherine Mermet*, *Marie Van Houtte*, *Rubens*, *Madame Bravy*, and *Maréchal Niel*—an attractive stand containing some lovely blooms.

For twelve blooms of *Maréchal Niel* Mr. Turner was first with very fresh and highly coloured examples; and Mr. Munday, Kennington, Oxford, second with fine blooms, but a trifle too much expanded.

For a collection of yellow *Roses*, not less than four varieties, three trusses of each, Messrs. J. Mitchell & Sons were first, and Mr. Chard second, with some of the varieties named in the preceding classes. Mr. Turner scored the first prize for a vase or arrangement of *Roses*; and Mr. Soder, gardener to W. O. Hanbury, Esq., Weald Hall, Brentwood, the second. The exhibits were fairly good of their kind, but were necessarily heavy and formal. A class of this nature is scarcely worthy of retention in any important schedule, and we observe it has no place in the programme of the National *Rose* Society.

Mr. Bolton, gardener to W. Spottiswoode, Esq., Coombe Bank, Sevenoaks, had the first prize for eighteen bunches of cut flowers of stove and greenhouse plants, and Mr. Bones, gardener to D. McIntosh, Esq., Havering Park, Romford, the second prize. Mr. Bolton's flowers consisted of *Begonia Royalty*, very fine; *Clerodendron Balfourianum* and *fallax*, *Ixoras Williamsii* and *Prince of Orange*, *Stárice profusa*, *Dipladima amabilis*, *Gardenias*, *Stephanotis*, *Atrides odoratum*, *Brassia verrucosa*, and *Oncidium flexuosum*—a very good collection. Mr. Bones' flowers were also good, but they were arranged without moss or fern, and did not appear to the best advantage.

TABLE DECORATIONS.

This department of the Exhibition was very good both in extent and quality. Third prizes were offered, which was not the case in the *Rose* classes. In the open class for the best decorated table, Mr. Chard, gardener to Sir F. Bathurst, Clarendon Park, won premier honours. In the centre was a healthy plant of *Cocos Weddelliana*, the pot being hidden with choice flowers and Grasses. This was flanked by two tall glasses each containing a spike of blue *Delphinium* and drooping Grasses, the base of the glasses being filled with *Orchids*, *Water Lilies*, and Ferns. Sundry smaller glasses of flowers completed the arrangement. The second prizes went to Mr. Burley, Brentwood, for a similarly arranged table, but the bases of the glasses were generally more heavy than Mr. Chard's. The remaining prize went to Mr. Soder, gardener to W. O. Hanbury, Esq., for a table arranged with great taste, and which many good judges considered merited the first prize. In the amateurs' class the prizes went to Mrs. E. Sperling, Grosvenor Road, South Norwood; Mrs. W. Seale, London Road, Sevenoaks; and Mr. W. Soder, gardener to W. O. Hanbury, Esq., Weald Hall, near Brentwood, Essex, in the order named. In the class for ladies only, Mrs. Soder was placed first; Mrs. W. Seale second; and Mrs. E. Burley, Brentwood, Essex, third. All the tables were noteworthy for light and tasteful arrangement rather than for lavish and overdone ornamentation.

Mr. S. Moyses, 22, Stockbridge Terrace, Beleravia, had the first prize for a wedding bouquet; and Mr. C. Hepburn, Decorative Florist, Crystal Palace, was placed second. In the class for opera bouquets Mr. C. Hepburn was first, and Mr. S. Moyses second. None of the bouquets were of special merit. Mr. C. Turner, Slough, had the first prize for four button-hole bouquets; and Miss Segeckle, Elfindale Lodge, Herne Hill, Dulwich, the second. Mr. Turner's exhibits in this class were far in advance of those of the other competitors.

In the miscellaneous class extra prizes were awarded to Mrs. M. Hodgkins, 35, Hyde Grove, Manchester, for a collection of skeleton leaves and flowers, very beautiful; to Mr. C. Turner, Slough, for a fine collection of *Roses* (*Miss Hassard*), and *Pinks*; to Mr. R. Parker, Exotic Nursery, Tooting, for cut flowers and herbaceous plants, varied, extensive, and good; to Mr. C. Burley, Nurseries, Brentwood, for cut *Pelargoniums*; and to Mr. W. Corp, 54, High Street, Oxford, for cut *Roses*.

Some very fine trusses of *Geraniums* were exhibited by Mr. Cannell; there were twenty-four varieties. The best scarlets were *Eros* and the *Spencer*. Crimson—*Sir H. S. Saxe* and *Dora Charlton*, *Salmey*, *Eller*, and *Maréchal*. *McMahon*. *Rose*—*Lady Emily* and *Dreadnought*; *Jealousy* and *New Life* were also conspicuous. The best doubles were *Madame Thibaut*, *Wonderful*, *Lucie Lemoine*, *Louis Bortard*, *Madame A. Ballet*, white; and C. H. Wagner. Mr. Cannell also exhibited an attractive stand of *Verbenas*. The varieties consisted of *Lady of Lorne*, *Willie Eckford*, *Ida Brunton*, *Lady Cowley*, *Jupiter*, *La Lovie*, *Annie*, *Madame Gumpier*, *Ensign*, *Sparkler*, *Emblem*, and *Star of Erin*.

At the May Show we had to record a feeling of dissatisfaction that prevailed amongst the exhibitors that the customary breakfast tickets were withheld, and on this occasion—the *Rose* Show, we are requested to state that in place of the usual excellent dinner provided for the Judges a cold luncheon was to have been their fare; against this they rebelled, and eventually "something warm" was forthcoming, but none of the Directors honoured the board with their presence.

ROMFORD AND ESSEX HORTICULTURAL SOCIETY'S SHOW.

This was held on Thursday last by the kind permission of D. McIntosh, Esq., in what is known as Marshall's Park, about ten minutes' walk from the centre of the town. As regards the quality of the plants and fruit exhibited this Show compared favourably with any held by the Society. The large well-grown plants of the late F. G. Wilkins, Esq., were but slightly missed, as some very fine specimens were staged by Mr. Bones, gardener to D. McIntosh, Esq., of Havering Park, who gained the principal prize, or rather would have done so but for the fact that a plant of *Stephanotis floribunda* in the collection had been grown with three stems instead of two. Our own opinion is that the Judges did wrong in disqualifying the collection, for this reason especially, as it was so far in advance of that which was awarded a first prize. For all practical purposes the *Stephanotis* was one plant and not three as decided by the Judges, and the exhibitor never attempted to conceal the fact that the plant had three stems.

The best Ferns, foliage plants, *Orchids*, *Selaginellas*, *Caladiums*, *Grapes*, *Strawberries*, vegetables, and cut flowers were sent from the garden of Francis Whitburn, Esq., of Loxford Hall. Mr. Bones had the best *Heaths*, *Pelargoniums*, also collection of fruit, and *Peaches* and *Nectarines*. Mr. W. North, gardener to T. Hill, Esq., Brentwood, had excellent *Fuchsias* and *Gloxinias*; he also had the best hand bouquet. Mr. Woodhams, gardener to C. P. Matthews, Esq., had excellent *Colerases*. Mr. and Mrs. Soder and Mr. and Mrs. Burley arranged exceedingly chaste stands for the dinner-table, and the prizes were equally divided amongst them. *Roses* were not nearly so good as we have seen them at this Show; but Mr. Meadmore had good blooms in the trade class, and Mr. Harrington, gardener to J. H. Pemberton, Esq., had even better flowers in the amateurs' classes.

The cottagers' classes were not well filled, the prizes being awarded to about three or four exhibitors. It is a great pity that there is no greater emulation amongst cottagers, as the managers are very anxious that they should exhibit, and would, although they are not in a flourishing state as regards funds, give better prizes if the cottagers would do their best. Mr. C. Matthews of Noak Hill received the award of 20s for the best kept garden; and Mr. J. Washington of London Road the second.

ANNALS AT REGENT'S PARK.

On a former occasion an Exhibition of Flower Beds was projected in the gardens of the Royal Botanic Society as one of the novel attractions of the season, but the idea was too fanciful and unpractical to be carried into effect. This year an innovation in exhibiting has been made by the well-known Holborn firm of seedsmen, Messrs. James Carter & Co., who have carried it out successfully. On the day of our visit more than 10,000 pots of annuals in flower were arranged in the long corridor, and they produced a display both varied and gay, novel and attractive. The Exhibition remains open for about a fortnight—other 10,000 pots of annuals being in store to replace those which fade.

The plants are arranged on a sloping stage, and occupy the whole length of the corridor. The front row consists of the charming annual *Ionopsis* aculeata. The seed was sown in April, and about a dozen seedlings were transplanted into each

45-sized pot; every plant represents a cushion of pinkish-white flowers, and the long row is extremely chaste. The plant requires a considerable quantity of water at the roots, but not much on the foliage, to have it in the good condition in which Messrs. Carter exhibit it: it will become popular, for at the Royal Horticultural Society's Show on the 19th inst. we noticed that this annual found many admirers. The next row consists of *Rhodanthes* in several varieties, and very attractive these *Everlastings* are when well grown; like the *Imopodium*—or rather with the *Rhodanthes* the matter is still more important that water must not be carelessly sprinkled over the foliage, but should only be applied to the roots. Everyone who requires attractive decorative plants in early summer should grow *Rhodanthes*. The most effective varieties in the Exhibition under notice are *Mangliesii*, maculata, very fine; Prince Bismarck, deep pink; atro-anginea, the richest of all; and *Alba*, an attractive white variety. Other plants of the same nature are *Acroclinium*, rose and white, very pretty; and *Waitzia acuminata*, bright yellow.

The other plants in the collection are arranged in panels—squares of dwarf sorts being divided by annuals of taller growth—Sweet Peas, Canary Plants, Lupines, *Chrysanthemum*, white and yellow, very telling, and admirably adapted for distant effect; *Clarkias*, *Larkspurs*, and *Cyanus* minor, brilliant azure blue, very beautiful for bouquets, but has a singular habit of fading in water.

Amongst the more effective of the dwarf plants are the dwarf *Nasturtium* (*Tropaeolum*). The darkest variety of all is King Theodore, intense velvety maroon; but very rich and floriferous is Tom Thumb, crimson. Extremely bright is an orange-scarlet variety named Beauty: this and King of Tom Thumb are the best of the scarlets, the latter being distinct on account of its small bluish-green foliage. There is a bright yellow variety without a spot, and another with maroon blotches on the petals. Those varieties named are amongst the most effective of annuals, which grow freely and flower profusely in any ordinary garden soil; they possess an advantage over many other annuals, inasmuch as they are seldom eaten by slugs. A few other annuals to note as being very effective are *Silene pendula* compacta—a dense mass of glowing pink, valuable alike for lines, beds, and for cultivation in pots; a pure white variety would be an acquisition—the one known as *Alba* being tinted with rose, and a more correct name for it would be *Alba rosea*. The *Collinsias* are charming when well grown in pots. The best variety is probably multicolor, but marmorata nearly approaches it. *Bartsieifolia* and its white variety are smaller, but very attractive. The *Centranthuses*—*Asperula* (*Woodroffia*)-like plants—are chaste annuals, the varieties of *C. macrocephala* affording pretty flowers for cutting. Another annual which yields acceptable soft scarlet flowers for bouquets is *Collomia coccinea*—the fringes resembling those of miniature *Bouvardias*. The *Kaulfnasias* are effective, especially *atroviolacea*, which is extremely rich in color. The *Leptosiphons* are amongst the most effective of dwarf growing sorts, the colors being yellow, lilac, rose, and white. *Gilias* are also pretty, *lacinata* and *capitata* major being very distinct. Showy and useful are the varieties of *Convolvulus* minor: one of the best varieties being *Tricolor splendens*. It is a little singular that while slugs attack *Convolvulus* major so persistently, they seldom touch *C. minor*. Another showy annual is the yellow *Sphenogyne speciosa*. *Mignonette* is of course represented, the variety named "Pyramidalis bouquet" having very fine spikes.

Amongst the curious annuals may be named *Genia turbinata flava*—a dwarf *Lathænia*-like plant with orange-yellow flowers. *Cerinth* major is also singular: in growth it is not unlike some of the taller-growing *Sedums* in habit, and has drooping flowers like those of *Correas*; and *Clintonia pulchella* is both curious and beautiful: it resembles a brilliant-colored *Lobelia*—yellow, purple, and white, and is well suited for cultivation in pots. The *Nemophilas*—all of them—are charming annuals for pots and beds, but those at the Regent's Park are just passing their best, and in a few days their beauty will have vanished.

Annuals are so varied in habit and colours—so easy of culture and so cheap, so admirably adapted for producing a pleasing effect in early summer both outdoors and under glass, that they are worthy of more care being bestowed on them than is often given. Too often the seed is sown in poor soil, and the plants are not thinned, consequently they are adjudged as being "weedy." Weedy indeed they are when thus neglected, but when properly cultivated they are as certainly charming flowers.

APPLE ELECTION.

I QUITE agree with "A NORTHERN GARDENER" that the summer time is the best for discussing the planting of fruit trees and also the sorts to plant. I also think that the result of the Apple election would be a good basis on which to start. I think there are many contributors, whose letters on Apple-culture have appeared in your Journal, who have not forwarded

lists for the election (fifteen kitchen and fifteen dessert Apples). I should like to have many more lists before finishing, and if they could be sent during the next fortnight I should feel obliged.

I have had many interesting letters from fruit growers, and have no doubt they are anxious to see the result in your Journal. Mr. Record introduced the subject at the last meeting of the Maidstone Gardeners' Society, and many present promised to send lists. Some of your readers who belong to kindred associations may perhaps assist in the same way.—LEWIS A. KILLICK, Langley, Maidstone.

THE ROSE ELECTION.

THE prospect of a good Rose bloom having quieted-down our good friend "WYLD SAVAOR," I venture to take time by the forelock, if he has any this forcing weather, and propound the question which, with the permission of our Editors, I propose for this year's solution.

It is to be essentially an exhibition election. Name the forty-eight best exhibition Roses in your estimation, placing them if possible in order of merit. If not thus placed, mark the best twenty-four out of the number, and further distinguish by some other mark the best twelve of these. Any list having Roses unmarked will be considered as named in order of merit.

QUALIFICATION FOR ELECTORS.—Each elector must have been on some occasion a prizetaker at one of the leading exhibitions, or a frequent prizetaker for several years at local Rose shows.

From any Rose-growers in this poll-book I shall be glad to receive replies by the 31st of August. I will then strive to publish the state of the poll as soon after this date as possible, so as to be in time for those intending to order plants.—JOSEPH HINTON, Warminster.

NOTES AND GLEANINGS.

At a general meeting of the Royal Horticultural Society, held on Tuesday 19th inst., Lord Alfred S. Churchill, V. P., in the chair, the following candidates were duly elected FELLOWS OF THE SOCIETY—viz., H. S. Bartlett, Miss Bowden, W. J. Bruty, Philip Butler, Mr. Joseph W. Chitty, W. W. Duffield, F. W. Fisher, Herman Gwinner, David Hartley, Chas. F. Hore, Mrs. C. W. Howell, Mrs. Jameson, Mrs. Johnson, Mrs. Edward Johnston, J. Norman Lockyer, F. R. S., Lieut.-Col. Page, Chas. J. Perceval, W. S. Prichard, A. C. Sellar, H. D. Seymour, Hon. Lady Stapleton, Mrs. Stapleton, Dr. Topham, &c. A list of five one-guinea Members elected by the Council was also announced.

A GREAT INTERNATIONAL FRUIT SHOW is announced to be held at the Alexandra Palace on the 13th, 14th, and 15th of September, when prizes amounting to upwards of £350 will be offered for fruits, vegetable, table decorations, and cut flowers. The schedule is in course of preparation and will shortly be ready, when it may be obtained on application to Mr. John A. McKenzie, 1 and 2, Great Winchester Street Buildings, London, E.C.

THE annual Exhibition of the RICHMOND HORTICULTURAL SOCIETY, which takes place this day, the 28th inst., will doubtless be worthy of a visit. The Exhibition of last year was an excellent one, and this year the schedule is very comprehensive, no less than 134 classes being provided, including many special prizes by H.S.H. the Duke of Teck, the Countess Russell, Lady John Chichester, Sir Arthur and Lady Rugge Price, Lady Alice Peel, Lady Trevor Laurence, Lady Parker, &c. A silver cup is also offered by Messrs. James Carter and Co. for a collection of vegetables. The premier class in the schedule is for a collection of plants arranged for effect in an area of not more than 100 feet of space, for which prizes of £5, £4, £3, and £2 are offered. This with some others of the principal classes are open to all exhibitors.

THE arrangements for the forthcoming INTERNATIONAL FRUIT AND FLOWER SHOW, to be held in Carlisle in September, are now progressing apace. The Committee have already good reason to believe that the handsome prizes offered—amounting to about £1300—will attract exhibitors from all quarters. Many eminent horticulturists in England and Scotland have signified their intention to compete; it is expected that continental exhibitors will make an appearance in the contests; and some very interesting collections of fruits, &c., will come from the United States and Canada. The marques will be

erected in the Castle Saucerries, which will be enclosed and specially devoted to the purposes of the Exhibition.

THE GARDENS OF THE ROYAL BOTANIC SOCIETY, Regent's Park, are in excellent order. The shady walks are always enjoyable during the summer months, and the beds and borders are gay with flowers, the object being to provide an early summer rather than a late autumn display. A new flower garden of an attractive design has been laid out by Mr. Coomber; it is near the American garden, and is effectively planted. It is refreshing to find that many old-fashioned perennials, and even annuals, are cultivated in these gardens, and produce a pleasing effect. Especially cheerful are such old plants as Foxgloves, Delphiniums, Campanulas, Pyrethrums, Irises, &c., as planted in the open spaces between newly planted shrubs, the contrast of the colours with the surrounding greenery being very telling. Foxgloves are particularly suitable for planting amongst shrubs, as the plants require little or no care after being planted. Seed should be sown at the present time, and if selected from a good strain noble spikes of finely spotted flowers will be produced in a year from the date of sowing.

We understand that H.R.H. the Princess Mary Adelaide and H.S.H. the Duke of Teck have expressed their wish and intention, if possible, to honour the Show of the NATIONAL ROSE SOCIETY with their presence at St. James's Hall on July 4th. The Exhibition is expected to be a very fine one, and quite worthy of Royal patronage.

NEWCASTLE FLOWER SHOW.—The Botanical and Horticultural Society of Durham, Northumberland, and Newcastle-on-Tyne, continues, we are informed, rapidly to increase in popularity and annual subscribers. The latter now number about 2700, including the M.P.'s, Mayors, many of the Magistrates and leading families of the two northern counties, being an increase of 2300 members during 1877. The summer show will be held in the Leazes Park on the 13th and 14th July, when prizes of the value of upwards of £500 will be awarded. The recent spring show was attended by 4905 visitors, in addition to 3000 school children who were admitted free. The Society has recently been admitted into union with the Royal Horticultural Society of London.

THE HEREFORD ROSE SHOW, which is to be held on July 6th, is expected to be a very good one, the date being favourable for the present rather late Rose season. £200 are provided in prizes. Entries close on July 3rd. Rev. C. H. Bulmer, Credenhill Rectory, Hereford, is the Honorary Secretary of the Show.

MR. B. S. WILLIAMS has sent to the OPORTO EXHIBITION a choice collection of his new and rare plants, including Ferns, Crotons, Palms, Dracenas, and Ixoras; also a collection of Orchids.

DOUBLE GERANIUMS are not generally popular for bedding purposes in consequence of their disposition to produce vigorous foliage, gross shoots, and a corresponding paucity of flowers when planted in the open ground. A few of the dwarfier growers, notably Wonderful, which may be described as a double *Venusvius*, may flower with tolerable freedom in beds, but the stronger growers are seldom satisfactory as bedders. In order to check their exuberance and to foster a low habit of growth a plan we saw the other day at Furzedown Park, Tooting, the beautiful residence of C. Seely, Esq., M.P., is noteworthy. Mr. Laing, the gardener, had planted a bed of the ordinary double varieties in mixture—old tall plants, the stems of which he had pegged close to the surface of the bed, distributing the points of the shoots regularly. They were showing flowers freely, and there is a prospect of a dwarf and floriferous bed resulting; at any rate the mode adopted of utilising old plants of strong-growing double Geraniums is worthy of mention.

THERE are now about five hundred blooms of *CYPRIPEDIUM SPECTABILE* in a bed 9 feet by 4 feet at the Newton Nurseries, Chester (James Dickson & Sons), where this beautiful North American Orchid is cultivated most successfully as a perfectly hardy plant.

We have received from an amateur, "RESPICE FINEM," a collection of flowers which he has grown in his greenhouse. They consist of *Stephanotis*, *Gardenia*, *Acimenes*, *Clerodendron Balfourianum*, *Pasiflora*, and *Gloxinias*, with *Ferns* and *Panicum variegatum*. The flowers are extremely fine, and reflect much credit on the cultivator. They arrived also as fresh as if just gathered. The stem of each was wrapped in a

little damp wadding, which was surrounded with tin-foil to prevent evaporation. Our correspondent proposes sending us an account of his "three-years experience in a greenhouse." We wish he would do so, for if he can teach other amateurs to grow similar flowers to those which he has sent us he will afford them much satisfaction.

MR. GILBERT, Burghley, writes to us as follows on the FRUIT CROP IN NORTHAMPTONSHIRE:—Gooseberries and Currants are a first-class crop of good-sized early fruit, not at present spoiled with honeydew. Apples and Pears, both bushes, standards, and on walls, must be called a failure almost entirely. Apricots and Plums, the former a very fair sprinkling, but the trees have been badly affected with grub, and I never remember so much of the wood going dead. Plums are but few and far between. Peaches and Nectarines are a fairly good crop on south walls, but on the west where we generally have them fine there are none. The most perplexing to me is the failure of my orchard-house Peaches. The flowers set by thousands, but the fruit dropped when the size of Peas. I notice others have done likewise. This ought to form a subject for the Scientific Committee of the Royal Horticultural Society. If they could tell us the reason of this failure they would command our hearty thanks.

"Some time ago," writes a correspondent, "Mr. Harding, in an interesting communication on Campanulas, directed attention to the attractiveness of *CAMPANULA CYNALABIA* when well grown in pots. It is indeed a charming plant for placing in the front row of a conservatory or greenhouse, also for vases and general decorative purposes. Some plants of this Campanula are now dense masses of lovely bright blue flowers, and which are much more admired than well-grown plants of blue Lobelias, effective as are these popular edging plants. This Campanula is of easy culture. The plants can be wintered in a cold frame and grown on in the same structure, the chief requirements being sound generous loam and an abundant supply of water during the growing and flowering season. I can recommend it with confidence where graceful fringe plants are required during the summer months. The colour of the flower is particularly bright and pleasing, and can hardly fail to be admired by all visitors; such, at least, is my experience, and I am sanguine it will be the experience of others who will grow this dwarf Campanula well."

FOR the decoration of large conservatories and for associating with Ferns, Palms, and other "foliage" plants in the ornamentation of halls, staircases, &c., plants of the old WHITE LILY, *Lilium candidum*, are extremely suitable. We recently noticed some good examples of this Lily in the conservatory at Furzedown, where they produced an excellent effect. When cultivated in pots and are afforded slight protection they flower early, affording a good succession to *Lilium longiflorum*, and continue until *L. lancifolium* in variety, *L. auratum*, and other late-flowering Lilies are in beauty. Common as the old white Lily may be, not many of the tribe are more really beautiful in the month of June, and none are more easily cultivated.

THE *AKEBIA QUINATA* which was recently alluded to by Mr. Luckhurst grows, says the *American Cultivator*, in wild luxuriance in Japan, running over tall trees and festooning them with its long slender stems and neat trifoliate leaves, completely covered with small clusters of dark brown flowers delightfully fragrant. For some time after its first introduction it was cultivated as a greenhouse plant, but it was found subsequently to be quite hardy in England, and a trial of it in our gardens has proved it to be as hardy as our own Virginian Creeper. When first planted, like most nursery plants, it makes slight progress; but as soon as well established it grows with great vigour, making annual shoots 10 to 15 feet long. The foliage somewhat resembles the Clover leaf, of about the same size, and about the last of May the flowers appear at the axille of the leaves in remarkable profusion. They are small in size, of a novel dark-brown colour, and deliciously fragrant. Its hardiness is really remarkable, even the smallest plants maturing without covering without the loss of a single branch. For covering arbours or trellises it is one of the most desirable of our climbing plants.

THE *AMERICAN "GARDENER'S MONTHLY"* in quoting from the *Journal of Horticulture* the heights of the WELLINGTONIAS at Poltimore, Kilterton, Cotlands, and other places, says it is provoking to read of the fine trees of *Sequoia gigantea* which they have in England, when we cannot grow it here in its native country. The only place we ever knew it do well was

at Ellwanger & Barry's of Rochester, N.Y. We shall be glad to know whether it still remains satisfactory with them, and whether of the hundreds that have been planted in the east during the past twenty years anyone else has a good specimen. (We sympathise with our American friends; few Conifers thrive more satisfactorily in England than the Wellingtonia (Sequoia) of which there are thousands of splendid specimens. It is remarkable that it refuses to flourish in the Eastern States of America, and the information that it does not do so will surprise many in England.)

— STAMING OUT INSECT PLAGUES.—Mr. Murray desires to stamp out the wireworm, crane fly, cockchafer, and other of the more notorious plagues by a direct system of catching and killing promoted by Act of Parliament. Let us not be in haste to take an unfavourable view of any such proposal, for the loss inflicted on the country by these and kindred pests must be reckoned by millions annually. Every man pays his share, although the farmers and gardeners are the first and heaviest sufferers. The discussion of the subject at the Society of Arts on the 5th inst. did not result in any strikingly practical conclusions, but we are bound to expect some benefit from so well ordered a debate on so important a subject. There is one thing to be done—we must educate public opinion. We must begin with the young, and in places of cramming them with book knowledge, encourage them in the observation of nature. For example, every ignorant boy is now, and for some time past has been, hungering after birds' nests; but well-taught boys do not touch birds' nests. To repress bird-catching altogether, and so spoil the fowling art, will soon be recognised as necessary; and when birds are properly protected the wireworm and crane fly will be stamped out by the songsters of the grove; and as for the cockchafer and the other larger enemies of our peace, the ignoble hawk and the smaller owls will take care of them, for all our smaller predaceous birds have a great fancy for beetles; and as for the fat grubs that haunt the Wheat field and the Potato crop, ask the rooks if they are not as nice as whitebait, and wanting neither cold punch nor clignet to wash them down.—(*Pictorial World.*)

— THE EUCALYPTUS.—M. Planchon has published some items of interest relating to the Eucalyptus, now extensively planted in California and in some of the Southern States of America; he says, "While the Eucalyptus amygdalina attains a height of 145 to 152 metres (473 to 496 feet), the dome of the Invalides in Paris is only 105 metres high, the Cathedral at Straeburg 142 metres, and the Pyramid of Cheops, 146 metres. The Eucalyptus globulnea, although not attaining to the height of E. amygdalina, is still taller than the celebrated California tree, the Sequoia gigantea. It is cultivated on a large scale at the Cape of Good Hope, the southern coasts of Spain and France, the Island of Corsica, and especially in Algeria. In Paris it is customary of late to place young specimens of the tree in public square as a moveable summer decoration; and so much is its peculiar form and blue colour admired, that the inhabitants are quite sorry when, as winter approaches, the plant has to be returned to the greenhouse. In Valencia (Spain) the vulgar name for it is the Fever Tree. A few years ago a Spanish gardener visiting Paris was shown the tree as a novelty. He remarked that it was already a popular specific against fevers amongst the peasants of Valencia, and that it had even been found necessary to plant a guard at the Fever Tree to prevent its leaves from being stripped."

ROSES AND THEIR CULTURE.

Roses here (Cirencester) are about a fortnight behind the usual time, and hardly any standards are out yet (18th of June). The Maréchal Niels make a grand display against walls, but are not quite up to the standard of some years. I have cut two or three fine blooms with stems as large as one's little finger, but there are not as many as usual of that size. The frost in the early part of May was a great check. Ought the Maréchal to be protected? I am never afraid of the severest winter: it is the spring that is trying. I have a tree on a south aspect which is beginning to get rather bare at the bottom; next year I intend to cover the lower part with fir branches to preserve the foliage, and will let you know the result. Young trees I certainly think ought to be protected with something the first year after removal. If the season is favourable all will go well in any case, but in others they will most likely not live.

With regard to manure for Roses, I generally use well-decayed stable manure, but Mr. Cranston says his manure is

the best. Why cannot your correspondent, the Rev. J. E. M. Camm, keep pige? they ought to pay for their own keep, and he would obtain his manure for nothing. Perhaps there is a little difficulty about straw, but I should think that might be easily arranged. I regard guano water as a stimulant; if a man has a glass of champagne now and then he requires a little beef as well.—AMATEUR, Cirencester.

[Notes on the degeneration of *Roses* will appear next week].

SPRINKLING WATER IN HOTHOUSES.

I AM quite aware that I have most of the gardening community against me when I say it is useless as a restorative to drooping plants to sprinkle the inside surfaces of hothouses on hot dry days while the sun's rays are unobstructed and the ventilators are wide open. I never denied that it "cools the air," and I think all the benefits "J. S." enumerates (see page 457) are from this cooling of the air after the houses have been allowed to get too hot; but prevention is better than cure, and it is advisable when practicable not to allow the air to become so heated as to require cooling. That it is not always practicable owing to changeable weather, or to the weather turning out different to our anticipations I grant, and I have sprinkled for the express purpose of cooling the air, but that is not what people usually sprinkle for. I have also in times past sprinkled with the idea of reviving drooping plants, but unless the said plants were shaded or had the air around them pretty much confined, or the water affected their roots, they never looked much better for it; and if they did look a trifle better for a short time it was all owing to the cooling of the air preventing their moisture being sucked out of them quite so fast for a few minutes, and I venture to think that a lump of ice placed in the house would have had a precisely similar effect. The benefit, if any, was from a lowering of the temperature, and not from the imaginary saturation of the atmosphere.

It is possible for surfaces to be saturated and yet for the atmosphere to be comparatively dry, or why should well-established Cauliflowers and other tender very succulent plants droop so much in sunshine after a good rain? I have noticed them droop more at such times than they often do after a month's dry weather. If you were to put a hand-light over one of the plants of course it would revive instantly, as evaporation would be checked. I am not speaking of plants which have ceased to grow for the want of moisture for a time and then become suddenly re-invigorated by a shower, but such as have received every possible attention and have never known a check; neither do I allude to bright sunshine after a spell of dull weather; but say, it may be bright to-day, the plants do not flag, and they are not dry at the roots. During the night or early to-morrow morning we may have two or three hours' refreshing rain, and yet as soon as the sun comes out the plants may droop badly and remain drooping till the evening. This phenomenon may be often witnessed, and if it is not the effect of a dry atmosphere I do not know what it is. Of course other plants besides the Cauliflower and such-like suffer, the foliage of fruit trees, and even that of some of the larger-leaved forest trees become flabby. A similar effect on indoor plants at the same time is produced in proportion to the amount of air admitted, and no amount of damping-down will entirely prevent it without shading or closing, because the air of the whole country about you is sucking away like a red-hot brick at the moisture in your little structure.

"J. S." says "that the difference between sprinkling an open and a closed house is only one of degree." Granted; but if the outer atmosphere is dry, in the latter case you are moistening the atmosphere contained in your little house, and in the former you are attempting to moisten that of the district, and perhaps the country in which you reside. "J. S." also says damping the leaves in an open house would be "turning them into evaporating surfaces as well, and chilling would be the result." The leaves are evaporating surfaces at all times in proportion to the quantity of light and dryness of the atmosphere reaching them. Damping them with a close house would check evaporation, and damping them with an open house would of course have a chilling effect. I also maintain that damping-down the house while the ventilators are wide open, the bright sun's rays unobstructed, and the outer atmosphere parched, has also a chilling effect, although in a less degree.

Concerning the use of the hygrometer I have not quite so high an opinion of it as "J. S." has. I do not think it is

infallible any more than the thermometer. Plants, if we learn to read their indications, are much more sensitive than ordinary scientific instruments. On the morning of the 15th inst. the tops of Tomatoes, which had been outdoore a fortnight, were severely injured by frost, while a registering thermometer which works fairly well with half a dozen others, and is not 200 yards from the Tomatoes, did not fall below 46°. It must have been frost which injured the Tomatoes, because when I first saw them they were only a little drooping and not much discoloured, but as soon as the sun shone full on them they turned black, just as Potatoes do when frozen. They are about 2 feet high. I have frequently observed frozen leaves in early summer while the thermometers were far above the freezing point; but it is but fair to add that here where the ground is very undulated the temperature often varies considerably in a few yards.

Our Apple crop, I am sorry to say, has gone the way of most other fruit-tree crops, and we shall be worse off for hardy fruits this year than we were last.—WILLIAM TAYLOR.

PSIDIUM PYRIFERUM.

Of the several Guavas grown in the West Indies the White Guava (*Psidium pyrifera*) is esteemed the best, and is the



Fig. 67.—*Psidium pyrifera*.

most abundant. In its wild state it is more of shrub than a tree, but when cultivated in gardens it attains the dimensions of a tree, with a stem about 6 inches in diameter and a head of the size of a medium sized Apple tree. The wood is very hard; the leaves are from 2 to 3 inches long, in pairs; the flower is white; and the fruit, which is as large as a hen's egg, is sulphur yellow, very smooth and perfumed. The pulp is flesh-coloured, aromatic, and grateful to the palate. This Guava is used as a desert fruit, and is also preserved with sugar; and Guava jelly is esteemed one of the finest conserves that come from the West Indies.

The Red Guava (*Psidium pomiferum*) is a much larger tree

than the White. The fruit is shaped like a Pomegranate, and when ripe has an agreeable odour. It is considered, however, to be inferior to the White Guava, but is much improved by cultivation. The Mountain Guava, which is found in the woods of Jamaica, is of no value as a fruit tree, but the wood is in request on account of its dark colour and the fine degree to which it may be polished.

But the Guava which is considered of the greatest value in this country is Catley's Guava (*Psidium Cattleyanum*). This fruit was first described by Mr. Catley of Barnet in a paper read before the Royal Horticultural Society, and it has since been cultivated in many gardens in this country. The fruit is about the size of a small Walnut, is nearly round, of a deep claret colour, and possesses somewhat the flavour of the Strawberry. The skin is of the consistence of that of the Fig, but thinner. The plant is also ornamental. It is propagated freely from cuttings. It is a native of China, and is more hardy than the Indian species, and it ripens its fruit in greenhouses in this country, frequently producing two crops in a year.

PEACH BLISTER.

In investigating a subject we are apt to confound cause with effect. Take a case of Peach "blister." Fungus is found upon the blistered leaves and spreads to the healthy foliage; fungus is therefore regarded as being the cause of the blister; but we may carefully remove every trace of the fungus, remove every blistered leaf and gouty shoot, and yet find the evil has not been removed. But if Nature smiles, affording warmth in place of frost and cold, the real cause is removed and we have healthy foliage; the fungus remains at a standstill, spreads not to the leaves or shoots formed during warmer weather, but prevails only in those formed during cold and frost, the disorganised tissues of which present a nidus for the fungus. We have no blistered Peach leaves under glass because we remove the cause—cold; but if we take a tree from the warm house to the open air we may calculate upon having blister the spring following if the weather be cold and the protection insufficient. If we introduce a blistered tree from the open air it will not communicate it to the other unblistered trees, nor continue to produce the fungus itself. It is so with trees against walls. They blister only in a cold spring, producing foliage free from blister when the weather becomes warm. Warmth, then, is the remedy for Peach blister, the opposite (cold) being its cause. We know that the black fungus on the leaves of the Orange, Myrtle, &c., is an effect, the cause being the scale which infests the trees, and that mildew is the effect of drought upon Pear. It is not sufficient to remove the black fungus from the Orange leaves, nor to destroy the mildew upon the Pear. We may remove the fungus, destroy the mildew, but if the cause remain it is certain to produce its effect. Destroy the scale, apply water, and keep moist, and there will be no black fungus nor mildew. "The curse causeless will not come."—G. A. G. P.

DRESSING CARNATIONS.

I STATED in my "Notes from My Garden in 1876" that I should not notice any criticisms made on my remarks on dressing Carnations, but the courteous and kindly reply of Mr. Rudd induces me to break silence; not that I intend to enter into any controversy, but lest he should imagine that my silence was discourteous. He and I view things differently, and I fear we are not likely to come any closer in agreement; and although I may not be in accord with him or many other florists, yet I cannot but think that I have some weight of argument on my side. I fear I cannot hope to take a lesson on dressing from Mr. Rudd as I shall be away in Scotland, and for the same reason shall be unable to see the show of the National Society at the Aquarium, but I none the less thank him for his good intentions to enlighten my ignorance.—D., Deal.

SHOBDON COURT.

THE name of Shobdon figures in Domesday as *Scopedune* (*Scopdan* = Sheepdown), and its early ecclesiastical and parochial history connects it with the Mortimers; whereas the family of Wigmore were farmers of the manor, and their descendants sold it to John Handford in 1655, from whom it passed to Robert Chaplin, and by him in 1705 was sold to Sir James Bateman, Knight and Lord Mayor of London, whose son William was raised in 1725 to the peerage of Ireland, and

in 1735 made a K.B. His son the second Viscount dying without issue in 1802, the estates passed to his cousin William Hanbury of Kelmarsh, Northamptonshire, who was created Baron Bateman in 1837, and was succeeded in 1845 by his eldest son the present peer.

The mansion, erected by the first peer, has lately undergone such alterations and improvements as to have been almost rebuilt, and the application of the most correct taste in modern landscape gardening has done justice to the noble timber. Two splendid Chestnuts (Spanish), one 15 feet in girth, another 15 feet 2 inches; a gigantic but decapitated Cedar, one of the finest in England; two very luxuriant and exquisite Occidental Planes, and one or two very fine Beeches stand within the lawn and near the flower garden; while round and about in calculated proximity are still finer Spanish Chestnuts, Cedars, English and Evergreen Oaks, bespeaking a venerable but hale

old age, and standing out amidst lesser coniferous and deciduous sojourners in a park of remarkable beauty. In that part of it nearest to the mansion and drive is a memorial of the old church of Shobdon, a rare sample of three connected Norman arches which have so much beauty and grace about them that they have been frequently associated with the Norman work of Kildpeck.

It seems that in the middle of last century the old church, which was close to the Court, was pulled down to make way for a domestic chapel, so to speak. The modern church serves its parochial as well as its domestic purposes undeniably, but it does not prevent one from regretting that fate of its predecessor. Part of the three old arches (which with the exception of the lower part of the church tower with its very interesting windows) are its sole souvenir set up in the home park. The visitors ascended an extensive and well-timbered slope,



Fig. 68.—CEDAR OF LEBANON AT SHOBDON COURT.

affording at each stage the loveliest views of the valleys of Lugg and Arrow, of the lands towards Ludlow beneath the Cleve, of the Malverns, the Black Mountains, the Brecon Beacon, and the Abergavenny Hills. They reached at last a very high point which led to the woods and coverts of Shobdon Hill, at the top of which (1000 feet in height) an entirely different view towards Radnorshire and Shropshire was gained, and the Longwynds, the Caradoc, the High Vynals, Bridgwood Common, Croffambury, and other interesting points were cited. In the immediate foreground from this hill, on the opposite bank of the river Lugg is the camp of Deerfold Forest, 913 feet above sea level, so interesting from being the place in which the eloquent Swinderby and some other Wyclifites hid themselves to escape the persecution which set in against them after the death of John of Gaunt.

It was impossible to pass by some Cedars of Lebanon of truly remarkable size; one trunk broken short off by some dire calamity at about 25 feet high, but with a yet perfect bole, gave a fair measurement of no less than 18 feet 2 inches in girth at 5 feet from the ground. But even this tree was surpassed by one in much more perfect condition on the lower ground, for this absolutely girthed 21 feet 10 inches at 5 feet from the ground, though lower down it was somewhat less. These trees are certainly the finest Cedars in the country, and there is some reason to believe that they were planted about

the year 1688, when the Cedar tree seems to have been first introduced into Herefordshire.

As to Shobdon church, it stands near the mansion on the site of the former edifice, which was built by Oliver de Merlylord, steward to Hugh de Mortimer, about the year 1140. He likewise founded near it a small priory for canons, which was afterwards removed to Eye, and thence finally to Wigmore.

Shobdon Court is the seat of the Right Hon. Lord Bateman (Lord-Lieutenant and Custos Rotulorum of the county). It is a brick mansion in the style of Louis XIV., and has a beautiful entrance-hall. The Park is three or four miles in extent.

G. R. Lewis in his "Ancient Church of Shobdon" (1852), in which every carved stone remaining is shown by lithographic, says, "The style of its architecture and the peculiarities of its sculptures differ from the general character of that which is known to be Norman. There is much more refinement in the design generally and more truth in the sculptured forms of the different living beings than is seen in the churches of the Norman period, and there is a high artistic feeling in the composition of the whole, as well as in all the leading features, which would induce us to conclude that it has more of the Byzantine character than is generally observed in the remains of this period. . . . The style of the arches leaves no room for doubt that they are part of the church built in the reign of King Stephen by Oliver de Merlylord."

Thos. Wright, "History of Ludlow and its Neighbourhood," says, "In the reign of King Stephen (A.D. 1135-1154) Hugh de Mortimer gave Shobdon to his Chief Steward, Oliver de Merlyford, and that the latter immediately proceeded to build a church. We are assured that a little chapel of wood was the only ecclesiastical building which had previously stood there."

The pleasure gardens are laid out in the Italian style, after plans by the late Mr. Nesfield. They are upwards of seven acres in extent, and lay all round the house. The north front is the principal entrance, and the west front the private entrance from the stables, and both of these gardens are laid out as lawns and shrubberies. On the east and south fronts are the flower gardens. The former is in the shape of a Maltese cross with fountain in the centre, and the south consists of two gardens on separate terraces, which are overlooked by the terrace on a level with the west-east front and orangery, and command a view of a lake to which they gradually slope. On the north, east, and south-east are the tennis courts and croquet ground, and on the south-west the rosery. Sixty thousand plants are annually used to fill these beds. The kitchen garden is five acres in extent and well walled-in.

The glass consists of five good houses and 300 feet by 7 of cold pits, the latter being used in winter for salads and in spring for hardening off bedding plants. In the houses there are some fine Orange trees, some excellent old Muscat Vines, a good collection of stove plants, &c. The gardens at Shobdon are under the able management of Mr. S. Vinney.

PRUNING ROSES.

Do we prune Roses too hard? I follow Mr. Hole's instructions upon pruning as set forth at pages 290 and 294 in his capital "Book about Roses."

My neighbour never prunes. His bushes are large, 4 feet high, 4 feet across, but full of Roses in bloom and in bud. He has twelve trees and is always pointing to their beauty. He could cut "fifty grand blooms, and has hundreds coming on."

I have 183 trees, healthy, pruned à la Hole and Paul's works, and I could only cut twelve blooms this morning. Neighbour says, "You're so fond of the knife. Why don't you put that knife away? Think of the blooms you are cutting off." This was said to me over the fence in October and March. I manure highly, the orthodox "whack" as recommended by the reverend Canon. Neighbour never manures. I give liquid manure. Neighbour never does.

Soil here, loam with chalk subsoil. We have at least 2½ feet of "good Rose soil resting on chalk." "One of the oldest Rose gardens in Hertfordshire, that of Dane End near Munden, in which Roses have for many years been most successfully cultivated, has a subsoil of chalk," writes Paul. So soil is not the cause of want of bloom. My trees (in their third year), are on their own roots, on Manetti, and the Briar, but all dwarf, Hybrid Perpetuels of the first class, as decided by the Rose elections in your Journal.

At page 202 Mr. Hole selected in his list of forty-eight Roses as the most suitable for exhibition the following Roses:—Alfred Colomb, 2; Baroness Rothschild, 5; Charles Lefebvre, 2; Dr. Andry, 20; Devonensis, 16; Emilié Hauberg, 25; La France, 5; Marchal Niel, 1; Marguerite de St. Amand, 25; Marie Baumann, 4; Pierre Notting, 21; Souvenir d'un Ami, 31; Céline Forestier, 82; Countess of Oxford, 11; Duc de Rohan, 71; Duchesse de Caylus, 52; Etienne Levet, 10; John Hopper, 18; Mdlle. Eugénie Verdier, 14; Madame Victor Verdier, 9; Marquise de Castellane, 8; Souvenir d'Elise, 38; Xavier Olibo, 17; Abel Grand, 47; Camille Bernardin, 27; Comtesse C. de Chabrillant, 77; Exposition de Bris, 61; Ferdinand de Lesseps, 31; Madame C. Joigneux, 64; François Michelin, 13; Victor Verdier, 36; Annie Wood, 50; Horace Neron, 19; Maréchal Vaillant, 84; Maurice Bernardin, 41; Général Jacqueminot, 63; Jules Margottin, 69; Madame Victor Verdier, 9; Monieur Noman, 53; Paul Neron, 55; Sénateur Vaise, 15; and Souvenir de la Malmaison, 43. The numbers after each represent the positions of the several Roses in your last Rose election list. Out of forty-eight selected by Mr. Hole the following only were unnoticed when the poll lists were gathered in:—Centifolia Rosea, Elis Morel, Leopold Hauberg, Madame Caillat, Devienne Lamy, Felix Genero, Louise Peyronnet, Madame Boutin, Madame Rivers, and Rubens; and as I have grown all selected by Mr. Hole, I may be allowed to add my humble tribute of unqualified praise of the Canon's selection and of the value of his "Book about Roses," decidedly the most delightful work and the best to follow. My oldest

patient's brow relaxed as he gloated over it, another chuckled, with a lady patient smirked, another sighed. I take it to my bed with me. Every Rose-grower should read it.

Aphis is best removed by soft soap and quassia chips, a quarter of a pound of each to eight gallons of water, boiling the chips for fifteen minutes.—C. C., *Convalescent Home, Kent.*

CLEMATISES IN MR. SMITH'S NURSERY, WORCESTER.

ONE may well exclaim, What becomes of all the Clematise? Perhaps few hardy ornamental plants have within the past twenty years grown so much in public estimation as these have. Although the Clematise is rapidly and successfully propagated, yet in its earlier stages it requires a good deal of care and practical knowledge, else however good the means at command may be, the plants are liable to damp-off, and especially if under very close confinement and in damp heat.

Last season close on 35,000 Clematises were grown in Mr. Smith's nursery; very few of these are now on hand, and thus encouraged they have gone into propagation of the Clematise this season even beyond the last year's number, great as it was. C. Jackman still holds its ground, and perhaps one-half of this year's number of plants are bearing the above name. Like the Hamburg amongst the Vines (for amidst all the new—"wonderful"—competitors the Black Hamburg for real usefulness has no rival); so Clematise Jackman, when we consider the colour of the flower and the substance of the petals, along with continued profusion of bloom, makes it a great favourite. For indoor culture it may be some others are more attractive, some are so that are not so well suited for outdoor culture. Those having very large petals are very liable to be spoiled by the wind when grown outdoors. Again, some are of so dark a colour they do not tell well outdoors, even at a moderate distance, and yet when grown under glass they are better appreciated.

The number of their petals varies much in the different varieties: some have not more than four, some five, some seven, and even eight petals to a flower. A description of the Clematise however correct cannot be so satisfactory as paying a visit to see them when in flower, especially where they are grown in such quantities and varieties as they are in Mr. Smith's nursery.—GEORGE DAWSON.

WEIGELAS.

THESE lovely natives of China, now classed as Diervilla, are the most charming of modern shrubs. It is only about thirty years since Mr. Fortune brought them, in joyous company with the Forsythias, to gladden us "outside barbarians." They have sines, principally, I suppose, through crosses of the rosea and amabilis, bred a wonderful family, of varied growths and tints of leaf and bloom. Yet one rarely sees any but the old rosea outside the grounds of the rich, the nursery, or the public park. This comes a good deal from their tame and stinky treatment in our catalogues and dearth of effort in our salesmen. A little more of just and generous rhetoric would hasten every flower lover in the land to invite their smile. They are almost all so hardy, all so quickly root from slips and cuttings, and have such rich variety of flower and leaf tint and of style, that the routine which invites and posts tiny rootings of the Rose to our door-steps would soon people every tasteful homestead with these stately Weigelas.

Their need of some brighter-tinted word-painting takes form when a leading catalogue sets down the Weigela nana variegata, the Dwarf Striped Weigela, curly as "a variety with variegated leaves and pink flowers" and the larger old variegated with faint tamer and more stinky note. These tintless words but faintly present the maidenly grace and purity which robe this Weigela nana at the season of its bloom. Then its leaflets daintily varied in white and bronze and green, from among which lift gently blushing forets of an airy evanescent pink, give it semblance to such a divinely chaste bouquet as might have fallen from out the garden of the sky. On leaf, in gentle tint of green, and in its dainty rose bloom, it rivals those limpid lingering lines that faintly tinge the far-off floating clouds of morn or eve. It is cruel to slight such a plant with word-tinting either terser or tamer.

Again, the Weigela Desboisi, one of our foremost catalogues merely notes as a "deep rose-coloured variety." Another of high standing only tells us of its "immense numbers of very dark rose-coloured flowers." Such dim portraiture brings out

but faint likeness of one of the most brilliant of flowering plants. In lavish, lasting, radiant bloom it rivals every hardy shrub. Deep reddish rose bells robe its whole spray and lead it into graceful droop. It is a glory in the noontide radiance. In the rich hues of parting day it seems ablaze with absorbed brilliancy.

For many years a plant posted well to the front of my grounds has won more lingering gaze and question from flower lovers than any other bloom. And in those grounds there stands pretty much every hardy blooming plant. Yet this Weigela Desboisi carries off the palm. It counts as warm admirers not only those who cherish a few choice plants, but those whose conservatories store the wealth of the floral world. Such eager look and quest following this lovely variety more than hints that a brighter word-pencilling of the plant might have made many purchasers of those who thus admiringly inquire its name and nature.

I shall note only one other of the slighted and rare visitors of this tribe—the Weigela versicolor. I find no description of this plant anywhere, nor its name in any but the Flushing catalogues. Doubtless our leading nurserymen know it well, but that they give no more note or place to a plant so wonderfully endowed "passeth all understanding." This Latin name, "Weigela versicolor," bespeaks almost to the eye of any, as in translation, a plant "of changeful hues."

A cluster of its flowers is of itself a bouquet of divers tinted blossoms. A branch glories in blooms of every varying shade, from white to deep red, and crimson darkening to maroon. Till the flower drops its tint is ever changing; a white-to-day, to-morrow shows a pink or salmon. A flower blooming out a pink day by day deepens into dark crimson. Thus, onward through an endless maze and interchange of colour, covering pretty much the whole spectrum. A plant so robed in a coat "of many colours," wearing flowers of such changeful hue, surely deserves wide and special note as one of the wonders of vegetation.

The aptness of the Weigela to take upon its seedlings a new and better style of growth and bloom promises most happy results from judicious crosses. That varieties of such rich tints on leaf and flower, so diverse therein and in their style of growth, have descended from parents without such traits marks a wonderful floral evolution. It is only rivalled by that tireless flow of rich and lovely blooms which owe their parentage to only a few species of the Gladioli. The Weigelas have already shown floral possibilities promising a rich future. Some bloom but once, some twice, some thrice, and some, like varieties of the Rose, are hardly ever without a show of blossoms. A plant holding on its roll such wide-apart colours as the deep dark crimson of the floribunda, the white of the alba, the clear pink of the amabilis, the change from white to many shades of pink as the insoline, and with a quiver full of assorted tints like the versicolor, added to the clear yellow of the old Diervilla, betokens the likely advent of still more notable excellences to come out of judicious crosses.

I look upon these commingled hues of bloom before long to glow in endless interchange of complexion, from the big bell-shaped flowers of their descendants. Fiery scarlet throats sweeping into golden rims; borders of maroon looking down into throats of yellow and crimson. Then, as to the promise of their foliage, out of the nana and others of such divers tinted leaves shall come zonals and all the ceaseless round of variety which skillful florists learn so surely to evolve. I look to see this journal yet record double-flowered Weigelas of every shade and commixture of colours; to send out chromoliths of new Weigelas, zoned and chenayed on big leaves through every shade of green and bronze, of white or golden tinge. Why not? If not in our time, still it is coming soon. That taste for flowers, that thirst, so readily supplied but never quenched by the facilities of the mail; that joy in floral home adornment and the gardenesque, so indexed by our rich and well-thumbed catalogues, by paths richly stored with floral wealth—a joy becoming every day so spoken in a thousand ways over the advent of new blooms and plants of mark—tells me that sure welcome will beget the coveted advance.

One thing let every lover of the Weigela note. The bloom of this plant is so profuse that it thirsts when in flower for abundant water. Not only the richness but the lasting of its bloom is wonderfully aided by a perfect deluge. Not a pail or two dashed around, but if possible, where you cannot call on the public water, a barrel full on end, slowly yielding its supply, and again and again renewed, will well repay all your trouble. Around that Desboisi when in bloom I soak the

ground wide out from the spread of its limbs. This is partly the cause of its lasting and brilliant show. Most flowers love abundant moisture, but the Weigela is a perfect glutton in drink.—(*American Gardener's Monthly*.)

ARTIFICIAL MANURE FOR ROSES.

MR. CAMM asks what he can substitute for farmyard dung, which he cannot get for money. The answer is furnished by considering what dung is. If Mr. Camm were to procure a ton of the very best quality and burn it all he would obtain a few bushels of white ashes, which would contain the whole manurial virtue of the dung with the exception of one ingredient. What he would lose would be three-fourths of the whole ton, which consists of simple water, about one-fifth of the ton which consists of carbon, and about one thousandth part of the ton which consists of nitrogen. Of these the water is valueless, the carbon almost equally so, for it serves only to lighten the soil and in some slight degree to attract and fix nitrogen, and therefore the nitrogen alone would need to be added to the ashes to give the full value of the ton of dung. Now, great part of the ashes being silicas and alumina, are themselves of no practical value, since they are found in every soil in ample quantity. What in the ashes is really valuable is the phosphoric acid, of which there would be about 9 lbs., and the potash, of which there would be about 10 lbs. So if Mr. Camm will make up a manure containing phosphoric acid 9 lbs., potash 10 lbs., and nitrogen 12 lbs., he will have an exact representation of the manurial constituents of a ton of dung; but he must in fact use only about one-sixth of the above amount of nitrogen, for he can obtain it only in an immediately soluble form, and in that form a ton of dung contains only 2 lbs. of nitrogen.

Now, to obtain these ingredients in the cheapest form he must mix together the following "artificial manures," taking care to obtain them from a dealer of the highest standing, since unfortunately there are more tricks in the manure trade than even in horse-dealing:—Superphosphate of lime ($\frac{1}{2}$ d. per lb.), 36 lbs.; sulphate or muriate of potash ($\frac{1}{4}$ d. per lb.), 25 lbs.; nitrate of soda ($\frac{1}{2}$ d. per lb.), 12 lbs.; but these are the wholesale prices (or nearly so) for lots of a ton or upwards. Mr. Camm will have to pay perhaps twice the price for small quantities, which would bring the cost of the equivalent of a ton of dung up to 10s. or 12s.; but, on the other hand, he has the advantage that he knows exactly what he is applying, and can alter the constituents to suit the seasons, the different stages of growth, or the peculiarities of his plants. For instance, if he wishes to promote fibrous roots, early ripening, and close texture of wood, let him increase the proportion of superphosphate; if he wishes for deep green foliage and succulent shoots let him increase the nitrate of soda. Bones are excellent as a substitute for superphosphate, but are of slower action and must be used in larger quantity. Night soil dissolved in water is of little value; urine would be much more efficacious. If the soil is not calcareous a little quicklime may be added to the above mixture with advantage. It would be otherwise if the mixture contained ammoniacal salts instead of nitrate of soda, for in that case the lime would drive off the ammonia, but it does not affect the nitrogen in nitric acid.

Lastly, let Mr. Camm keep in view that the above mixture contains the essence of dung in a form instantly available to plants, whereas dung contains the same ingredients to some extent locked up in combination with organic matter, and therefore set at liberty only by slow degrees as it decomposes; hence it would be advisable that he should apply the mixture in smaller proportions than he would administer in the shape of dung, and that these should be repeated so as in the course of the season to bring up the total amount to what would be found in the usual dressing of dung. 1 oz. of the mixture to 2 square feet (not feet square) would be about equivalent to 20 tons of dung to the acre; but if we suppose for the sake of example that Mr. Camm would allow a quarter of a hundred-weight of rotten dung to each of his Roses, then the equivalent of this would be about 1 lb. of the mixture, and this should be administered during the season in doses not exceeding 2 ozs. at a time. I hope if he tries the experiment he will not fail to communicate the result.—J. B. K.

MR. CHARLES LIDGARD.

It will be, I am sure, a grief to many to hear that their good old friend "Charley Lidgard" is gone, and that one of the few

remaining old school of florists will no more be seen scrutinising with his patient and discriminating gaze those flowers in which he especially delighted. He was one of those whom one used to meet in the "salet days" of one's youth, when the growth of florists' flowers in the metropolis was a reality; and wherever there was a meeting of florists—at The Horns, Kensington, at Worton Cottage, or at his own house, there he was sure to be found. Quiet and unobtrusive in his ways, somewhat slow in his movements but always sure, he might ever be depended upon for a careful examination of everything submitted to him, and for an honest opinion on its merits. In former days he was a successful exhibitor of Fansies and Auriculas, and deplored the falling-off in their culture around London, which few could speak of so well as he. He had not entirely given up the latter, for only a few years ago he had added to his little stock, but increasing infirmities made him less ardent than he used to be. There may have been many more extensive florists than our good friend, but no truer or heartier one could be found. He died on the 20th inst., at the age of sixty-seven, and will be largely and sincerely regretted.—D., Deal.

THE OLD MARKET GARDENS AND NURSERIES OF LONDON.—No. 17.

The highly respectable, and even yet semi-rural, suburb of Hammersmith cannot, as it seems, claim a venerable history as a distinct locality. For many centuries it is undistinguished from Fulham, of which it is still a hamlet, that extensive village being considered to extend over a district about five miles in length by two in breadth. It may be surmised, therefore, that the peculiarities of Hammersmith did not much incline men to settle there, although a main road ran through it to various places in West Middlesex. Doubtless until comparatively recent times the land in Hammersmith was ill adapted for cultivation. Water flowed over its marshes from the adjacent Thames on many days, while the district received water also from the forest of Middlesex above it, which stretched along the hills to the north near Shepherd's Bush and Wormholt Scrubs. Apparently, when Sir Nicholas Crispe took into his head to build himself a house at Hammersmith, there was not another habitation in the place, saving, perhaps, a hovel or two erected for the occasional use of the peasant who attended to the cattle that grazed here. No doubt it was the richness of Hammersmith in clay which led Sir Nicholas to his experiments in brick-making there during the reign of Charles I., and down to this hour bricks have been made in the locality.

Like other suburbs, Hammersmith has grown rapidly in the Victorian era, for when Brewer wrote about it sixty years ago the number of families living in the hamlet was about 1500, and as out of this population 210 families were connected with the cultivation of the ground, it was evidently an important suburb as contributing fruit and vegetables to the London markets. Though the times have changed since the rail has opened up an easy communication between London and places more remote than Hammersmith, the district has still much garden ground; but here, as in other suburbs, the orchards have rapidly decreased in number, partly perhaps owing to the discouraging effects of London's smoky atmosphere, partly, it may be, through the difficulty of guarding the fruit successfully from depredators. In the reign of good old George III., however, it was quite a sight in the autumn when driving through Kensington, Hammersmith, and Turnham Green, to notice the quantity of fruit on both sides of the road. Doubtless the orchards were clustered near the main road for convenience of transit, and also in several parts the ground is higher than towards the Thames. Some garden produce was, until the beginning of this century, sent to town by the circuitous route of the river from the fields in Hammersmith and Fulham that were handily situated for the transfer of Cabbages and Potatoes to barges, and the growing of vegetables in Hammersmith appears to have preceded the cultivation of fruit; nor did the farmer at once withdraw when the market gardener came upon the scene; so that here and there during the eighteenth century fields of corn were interspersed among the market gardens, and the plough might have been seen at work.

Faulkner, in his description of Hammersmith published in 1838, indulges in some rather amusing observations on the taste for vegetables developed in modern times, these being suggested, seemingly, by his suburban perambulations. "As

to the produce of a garden," says he, "every middle-aged person may observe within his own memory how vastly the consumption of vegetables has increased. Green stalls in cities now support multitudes in a comfortable state, while gardeners get fortunes. Our Saxon ancestors certainly had some sort of a Cabbage, because they called the month of February 'Sproutale'; but long after their days the cultivation of gardens was little attended to." In this assumption our philosophising friend is not quite correct. London citizens at any rate had quite a fancy for greens before the times of the Stuarts, and, as stated in a previous article, when the growth of the metropolis interfered with the citizens' gardens in Holborn and Cheapside many of them took plots for themselves out at Finsbury or towards Islington. Vegetable soups, indeed, played no unimportant part in the cookery of our ancestors. Then, as to the fortunes supposed to have been made by market gardeners, it has, I believe, been rather the exception than the rule in most London suburbs. Fortunes are and have been made by nurserymen, especially by those successful in the introduction of exotics before the calling became, like most other callings in our day, considerably overstocked. But Faulkner may be quite right when he attributes an increased taste for vegetables to the influence of the monks in the middle ages, who came, many of them, into England from Italy, and having little to do took up with gardening pursuits. And, quoting from the venerable Ray, Faulkner remarks that the English seem to have been especially delighted with the introduction of Endive and Celery. The latter, however, they were at first so far from appreciating that they ate it with oil and pepper, dressed somewhat, I suppose, as we dress Lettuce salad.

Returning to Hammersmith from this digression, it should be noticed that when the locality was at its best, so far as gardening interests went, more than 250 acres were under cultivation; at present perhaps not half as much through the upspringing of new streets. Methods, too, have been altered, generally for the better, and it is curious to compare with modern modes the style pursued by the grandfathers of our present horticulturists. In the Hammersmith orchards was exemplified the plan of having an upper and an under crop of fruit, the upper being Apples, Pears, Cherries, Plums, and Walnuts (the soil of the district, however, was long regarded as unfavourable for the growth of the Pear), while the under crop was Currants, Gooseberries, and Raspberries. This fashion of planting has not yet gone out, and plenty of illustrations may be found in the fruit-producing districts of Kent; but forty years ago the London gardeners began to find it had grave objections, so they set fruit trees in rows, giving a sufficient space between the rows to allow of the occasional culture of vegetables. The gardeners depended much on the crops of Beans and Peas, many of them preparing banks sloped towards the south for early Peas. Onions were also grown largely, and the bulk of them sown in February. The land, which was gradually cleared of Cabbages during the winter, was usually sown with Carrots or Peas for a later gathering. Cucumbers were frequently put in amongst the rows of early Cabbages for the sake of succession, as also Spinach. At Hammersmith Cauldflowers, Broccoli, and Parsnips were not much attended to in Faulkner's time, but the gardeners sent to market large supplies of "small salad" raised under glass, and they were famous for their Lettuces. Through their plentiful use of manure three or four crops of vegetables were had from the same land during one year, and the chronicler hints that the gardeners had a practice of making what were called "muck holes" for the fermentation of their manure, to which persons with sensitive noses might perhaps object. And he seems to regret that the "old orchards" were already gradually disappearing, because by the culture of vegetables a steadier income was attainable.

But Hammersmith is best known to fame, not through any market gardener of the place, although it had many a good name. The mention of it at once reminds one of the "Vineyard Nursery;" necessarily, however, the increase in the number of nurseries has changed the position of an establishment deemed almost unrivalled in the reign of George III. I could give more credence, I must confess, to the statement that the nursery was once considered the "first in the world" if I had not discovered the same assertion is made about Loddige's and Brompton Park Nursery, very probably about others also. Undoubtedly Messrs. Lee & Kennedy do occupy high rank among the pioneers of horticultural and even of scientific progress, for those who have devoted their energies to the

work of procuring and cultivating exotics have largely aided in the advance of botany and physiology.

To James Lee belongs the honour of having established the Hammersmith Nursery, and Caledonia claims him as her offspring, for he was born at Salkirk in 1715. Receiving encouragement from the Duke of Argyll, he obtained employment at Syon, and subsequently at Whitton; and during 1760, being acquainted with Mr. L. Kennedy, then gardener to Lord Bolton at Chiswick, the two commenced a nursery at Hammersmith on a fine piece of land with a substratum of gravel, where there was at the time a vineyard, from which the establishment took its name. A little earlier in the century this vineyard had produced annually a quantity of wine which was sold as "Burgundy" in an antique thatched house attached to the premises. Lee, however, had aspirations beyond wine-making or Vine-growing simply. He had become acquainted with Linnaeus and other botanists, and he opened-up communications with persons resident in various countries, who forwarded to his establishment new and rare plants; he also kept his eyes open for the chances of getting specimens from occasional travellers. The story has recently been reprinted in this Journal about James Lee's purchase of the first Fuchsia from the sailor's mother at Wapping, and the celebrity with which he made some hundred guineas out of a small investment on the solitary plant he saw in a window in that unsavoury locality. That there was once a doubt appears from Faulkner's hint that the story is apocryphal, and that the Fuchsia was sent home in the ordinary way by a collector in the employ of the firm. From personal inquiries I am now able to confirm the narration so often published, which is exceptional, since so few anecdotes are true. One curious circumstance in the history of the Vineyard Nurseries was that at one time, in partnership with the Empress Josephine, the proprietors had a collector in Africa who sent to England many new *Eriosea*, *Isias*, and other plants of tropical regions. It belongs also to the history of the nursery that the first China Rose was there exhibited in 1787 or 1788; from this also a handsome sum was realised.

The worthy nurseryman James Lee, sen., lived to the age of eighty, enviving his partner Mr. Kennedy; but the establishment was carried on under the joint names by descendants of the two founders until 1818, when it became the sole property of James Lee, jun., and it is still in the hands of members of the family. Nor can it be said that its horticultural fame has declined since it has passed its centenary, but it remains the head-quarters of an extensive industry.—C.

EXETER ROSE SHOW.

JUNE 26TH.

"Are there any Rose shows in November?" was the question put by an amateur on a certain occasion to Mr. George Paul. "Well," answered that genial rosonian with a knowing look, "not as a general rule, but perhaps there may be this year." "Ah! I am glad of that, for perhaps my *Ma-etis* may be in bloom by then." I am sure this question, absurd though it may appear at first sight, is not so very wide of the mark, for many rosonian have no blooms out. I saw Mr. Carr when in London, and he had carefully a bloom on his maidens. In the large piece that I mainly relied for my show blooms this year I only cut one bloom this morning, and that was a Tea. So I was in fear and trembling for the success of the Exeter Rose Show; and a first view of the tent increased my forebodings, whilst the gloom by the weather, which at one time was very threatening, deepened them. But happily as soon as the time for judging came on all one's fears were dissipated. The rain let off, the sun shone out, and the covers were taken off a glorious lot of Roses.

I do not say that we have not had larger and perhaps better shows at Exeter, for the year of the contest for Mr. Baker and my prize no less than seven nurserymen competed, whilst to-day there were only three, but I do not think that ever fresher, cleaner, prettier stands of blooms were exhibited here than on this occasion. The Show was infinitely better than the one at the Crystal Palace, and I do not think that any future show will surpass it in excellence, provided that numbers of exhibitors and stands are excluded from comparison.

The nurserymen exhibitors were Mr. Charles Turner, Mr. Curtis of Torquay, and Dr. Woodman, or, as perhaps we ought to say, "Messrs. Lacombe & Pince." The last-named gentleman has not competed before, and gladly do I for one welcome the advent of a new nurseryman to our Rose contests. He, however, did not compete in the larger classes, only for twenty-four single blooms, where he had no competitors, and for Tea Roses, which were very fair.

I was very much pleased with Mr. Turner's seventy-two. I do not for one moment wish it to be understood that these were up to that great rosonian's usual form, but they were very good indeed when the season is taken into consideration. Many of the blooms he showed, which were pre-eminently good, are the same as those shown at the Crystal Palace, and it is not necessary to repeat their names. He was first both for seventy-two and forty-eight trebles, and showed some blooms of older varieties which were extra good. Among others I must name *Marie Anne George Paul*, which was equal to *Camille de Rohan* or any of the best varieties. *Julie Tourain*, again, was exceedingly fine, as were *Monsieur Boncome* and *Souvenir de William Wood*. He showed all his own seedlings very fine, and a new one which I had not seen before—the *Deau de Windsor*. Mr. Curtis (*Torquay*), who was second in the two classes, had some lovely Teas, but he was not up to Mr. Turner's form. His boxes pleased me exceedingly; but they were uneven, and some blooms, notably *Madame Cécile* and *Joigneux*, were all abroad. But he made up for all shortcomings in his box of Teas. This was a superb stand, quite equal to Mr. Mitchell's at the Crystal Palace last Saturday. Mr. Curtis's blooms of *De-venisienis*, *Catherine Mermet*, *Homère*, *Souvenir d'un Ami*, *Marcel Niel*, and *Socrates* were good; he had also a fine bloom of the old *Tea Victoria*, which was like a novelty to most of us. Mr. Baker's (*Hercules*) was second in the class for Teas, and his box undoubtedly contained the bloom of the Show. Its name was (bear it, "PARSON'S GARDENER,") *Marie Van Houtte*. Mr. Curtis said of this bloom that if the Queen of England could only possess it, and I added if some fairy could preserve it from decay, it would be a far finer ornament than the *kok-i-noor*. It is simply perfection both in form, delicate colouring, freshness, and every good quality which a Rose could possess. Dr. Woodman was the only other competitor in Teas. He had some fine blooms, but one or two were very ragged.

Mr. T. Jowitt of Hereford was first for forty-eight. He had some splendid blooms, mostly cut from maiden plants. He had a bloom of *Georges Jacqueminot* which was a perfect wonder, and *Marie Baumann*, *Mulle*, *Marie Cousin*, *Mons. Noman*, and a little gem of a Tea rarely seen—*Reine du Portugal*, were all competitors for their excellence.

For thirty-six Mr. Baker was first with some splendid blooms, including *Charles Lefebvre*, *Marguerite de St. Amand*, *Xavier Olibo*, *Madame Lacharme*, *Marquise de Castellane*, *Madame Bravy*, *Duke of Edinburgh*, and numbers of others, all splendid. This gentleman surpasses himself in the class for twenty-four blooms of one variety. He actually put up twenty-four blooms of *Marie Van Houtte*! Think of that! All splendid; not of course equal to the one in his box of Teas, for I do not think he will ever have such another, but only second to it. "That stand," said Mr. Curtis, who was competing in the same class, "ought to have had a double first prize." It was glorious. Very interesting to a *PARSON'S GARDENER*, too, besides the above fact, will be the information that the Rose which was second in this class was *Julie Margottin*, shown by Mr. Curtis. These were remarkably good and held their own against anything in the Show except *Marie Van Houtte*. The same firm were first for new Roses, which were mostly good. The best were *Mlle. Emilia Verdier*, and which is very like *Marie Baumann*; *Atel Carrière*, a grand dark Rose, somewhat like *Camille de Rohan*; *Duchesse de Valombrosa*, and *Henry Bennett*, which, however, is too like *Lord Macaulay*. Mr. Baker showed also lovely stands of *Charles Lefebvre* and *Duke of Wellington*. He was the making of the Show. All his blooms were fresh as the morning dew, set up as if still growing on the plants, and to whatever part of the tent you turned there you found Roses of his to delight your eyes—Roses to think of by day and dream of by night—Roses which prove more than any other else that I have seen how grateful a mother is Nature, how kindly she responds to our labour and care, and with what blessings she covers the heads of those who, like Mr. Baker, throw heart and soul into the glorious work of cultivating the queen of flowers.—WYLD SAVAGE.

DOINGS OF THE LAST AND WORK FOR THE PRESENT WEEK.

HARDY FRUIT GARDEN.

The recent hot weather has caused a luxuriant and rapid growth in all trees, especially in those against walls. It is a sign either of had management or want of time to have the young wood dangling about owing to neglect in thinning and nailing. That that nothing can be more untidy; and besides, the superfluous branches shade the fruit and otherwise injure the trees. On a wall facing west Knight's Early Black Cherry is approaching the ripening stage, and the birds attacked them long before they had any favour. We thought it best to cut off the superfluous young wood and to nail in the remainder to the wall, afterwards fastening a net to the wall at top and bottom, pinning sticks to tighten the net about a foot from the wall. If the net is left to hang near the Cherries the birds will

take them through the meshes: indeed they will sometimes fly against the netting, and so force it against the wall, and thus reach the fruit. We shall attend to the Pear and Plum trees as soon as we possibly can. Those that are horizontally trained will not require much attention except to cut out the young wood, leaving only two or three eyes at the base.

Fruit trees in the open garden may be said to be a failure. We did fancy that as the Apple blossoms were not open when the frost came they would not suffer much from its effects, but in this we have been disappointed. Some of the shy-setting sorts are almost without fruit; on none of them is there a full crop, and a larger proportion than usual seems inclined to drop off. A few of those which have most fruit on them are Kentish Codlin, Cellini, Hawthornden, Cox's Orange Pippin, Court Pendu Plat, and Cockle's Pippin. These are usually free-setting varieties. Plums and Pears are worse than last year. The Plum crop especially may be said to be a complete failure: even Victoria and the Bullace are bare of fruit. The Strawberry crop promises to be an unusually good one, and the earliest sorts are now coming in. A thorough good watering will have a magical effect upon the fruit. As soon as the water has been applied a mulching of manure prevents evaporation. It is necessary to net the beds entirely to save the crop from birds, for it is very annoying to find the best fruit crushed with the beaks of thrushes and other birds, which not unfrequently destroy more than they carry away.

PINE HOUSES.

The nights have been so warm that we have done without artificial heat in these structures for some time. The thermometer seldom falls below 65° at night, even if a little ventilation is left on at the highest part of the house. There are now plenty of Queens ripening in the small house started about the first week in the year, and seldom have we had them of such good quality. The atmosphere is kept rather dry, and for some time the temperature from sun heat has ranged about 85° or 90°. The fruit keeps good two or three weeks after it is ripe, even during hot weather—a sure sign of good quality. Queens do not seem to receive any injury even if they are allowed to ripen fully exposed to an almost tropical sun, but Charlotte Rothschild and Smooth-leaved Cayenne suffer if the fruit is caught by a fierce glare of sunshine: the symptoms are discoloration of the fruit, and decay sets in as soon as it is ripe. The Queens for fruiting next year in June have now been potted into their fruiting pots. Ten and 11-inch pots are sufficiently large for Queens; 12 and 13-inch for those of more vigorous growth except Jamaica and Montserrat, which may have the same sized pots as Queens. It is necessary to press as much rich turfy loam as possible into the pots, as the plants like firm potting, and it is surprising to the uninitiated to see how much material can be pressed into an 11-inch pot. After potting a bottom heat of 95° or even 100° will be desirable to start the roots into active growth.

PEACH HOUSE.

Just a word as to the treatment when the fruit has been cleared from the trees. The house must not be neglected even now. In previous numbers the importance of clearing the trees from insect pests was urged. Even if the trees are free from aphid it is very unlikely that red spider is not present, and this pest alone will soon cause the leaves to fall to the ground. It can be cleared off by syringing with the garden engine and applying the water with considerable force. It is not easy to eradicate aphid in this way, but two fumigations with tobacco smoke when the leaves are dry will effect their destruction. The borders must also have a good watering to plump up the buds for next season's crop. If all gross leaf-growths have not been cut out this ought to be done without delay. It is a great mistake to allow them to remain. Very weak growths where they are wanted to fill up a space ought not to be stopped, else they will not have any leaf buds. The only leaf bud usual on weakly growths is that at the end.

Late houses where the fruit is leaned may be closed early in the afternoon, syringing the trees with water about the same temperature as the house. A high temperature and moist atmosphere suits the Peach when the fruit is swelling off.

The new early Peaches, beginning with Rivers' Early Beatrix and other sorts, such as Hale's Early and Early York for succession, are a boon to Peach forcers; but there is also this disadvantage, that there is so long a period between the ripening of the early and latest sorts, such as Walburton Admirable, that justice cannot be done to both at the same time. The ripening fruit requires a moderately dry atmosphere, and that just commencing to swell ought to have it moist with a higher night temperature. We do not recommend planting later sorts than Grosse Mignonne with the earliest sorts.

GREENHOUSE AND CONSERVATORY.

Now that there are plenty of flowers in the beds and borders out of doors we are not quite so anxious to have an abundant display in the greenhouse. Of course there are plenty of places where it is expected that a good display should be kept up all the year round; but, as we have frequently hinted, this cannot

be done unless there are a proportionate number of smaller glass structures wherein to grow on the plants, both hard and soft-wooded, when they are not in flower. We have been engaged picking off the withered flowers from Azaleas, Pimeles, and other hardwooded plants that have done flowering, and also stopping the growth of some of them for the last time. We have urged the importance of stopping the vigorous growth of fruit trees; it is equally or perhaps more important to do so in regard to hardwooded plants. To form good specimens constant attention must be given to tying the growths into the best position, and also to stopping them, so that the specimen may be equally balanced throughout. You must not stop the growths of fruit trees after July, and we would not stop the growths of any flowering hardwooded plant after that month. Some specimens are also much liable to the attacks of red spider, and this must be carefully watched for, and the plants that are infested must be laid on their sides and be thoroughly syringed with soapy water. This must be allowed to drain off, and then the plants in two or three hours should be syringed with clear rain water. Syringing with clear rain water daily will prevent red spider from doing any injury. Many plants are subject to mildew, and this parasite does great damage if it is not destroyed in good time. Many species of Cape Heaths are extremely susceptible to its attacks, and we generally know which of them are likely to be attacked, and are on the outlook for it. A dusting with dry flowers of sulphur destroys it in its early stages, and the plant does not suffer. We are not over-particular as to times and seasons for potting, but generally perform the operation when the plants need it; and if it is carefully done and the plants are subjected to a proper course of treatment afterwards they do not suffer any check. Pelargoniums are in full flower, and as the trusses fade they are removed, as nothing is more unsightly than decayed leaves or flowers on plants in a greenhouse or conservatory.

In a shady corner of the house are Filmy Ferns and terrestrial Orchids. The Ferns require to be further protected by a glass enclosure, so that a very moist and rather close atmosphere may be provided for them. We have tried the American Pitcher-plants in the space with the *Todesia*, *Hymenophyllum*, &c., but find it rather too close, and the open stage suitable for the Orchids is rather too dry. *Cypripedium spectabile* is one of the most lovely of the species, and should be in every collection of plants, as it is so easily grown. *Orchis foliosa* requires the same treatment, and as a background to them some of the *Gleichenias* grow most vigorously and form handsome specimens with a temperature even in winter just a little above the ordinary greenhouse, and they require to be syringed twice daily.

FLORIST FLOWERS.

The hot weather has brought on the Pinks, Carnations, and Picotees at a very rapid rate. The Pinks are now fully in bloom, and are finer than we have ever had them. The being on some of the best sorts is perfect, and such varieties as Dr. Masters, Shirley Hibberd, and others of that type have flowers quite as large as the best grown Carnations and Picotees. Letters from the north state that the Rannunculus is in fine bloom, and those who wish to retain it as long as possible will shade with light canvas. The Tulip bloom is now over, even as far north as Kirby Malzard. See that the beds do not become overrun with weeds, and when the leaves wither the roots must be lifted and stored in the usual way. A box of blooms has arrived from the Rev. F. D. Horner containing some charming new breaks, especially in hylemans and roses. The ground colour is pure and transparent like the finest porcelain, and free from spot or bar, and the petals are beautifully feathered.—J. DOUGLAS.

TO CORRESPONDENTS.

* * * All correspondence should be directed either to "The Editors," or to "The Publisher." Letters addressed to Mr. Johnson or Dr. Hogg often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (Pug).—"The Fern Manual" and "Indoor Gardening." They are published at our office.

TRUMPETS RUNNING TO SEED (*H. F. C.*).—Daily copious watering is the most effectual preventive.

NITRATE OF SODA (*Mrs. C. W.*).—It would benefit the lawn. Apply it now, and in the quantity we specified.

ROSE SHAW (*J. Brunel*).—We can give no more information than that we have already published. Write to the Rev. H. Honeywood Dombain, Westwell Vicarage, Ashford, Kent.

PROPAGATING THROLOP PELARGONIUMS (*A. S. Q.*).—We would plant them out in the half-soil, and take the cuttings as soon as they are large enough. Lift the plants in September and grow them on during winter in heat, and a great number of cuttings will be produced, which you might strike and have ready for planting by bedding-out time.

ROSES IN THE HOUSE (*C. C.*).—We have, notwithstanding all the care you have bestowed upon your plants, that the want of light and probably air

and Long-faced Tumblers especially, and these were very good. As usual Mr. Binns arrived too late with his exquisite English Owl, and the honours fell to other exhibitors. Carriers good; and the first in Pouters a young Blue hen, very good in all points. In Turbites a grand Yellow was to the front; and in Short-faced Tumblers an Agate of capital head qualities was placed first. Autwerps were very good, and mostly Medium-faces, though the first, a Silver Dan, was a capital headed Short-faced cock.

At the close of the Show a meeting was held, the President, Lieut.-Col. Child, in the chair, when it was decided to hold another Show on the 2nd of August for young birds only.

PIGEONS.—CARRIERS.—1, W. Hughes. 2, E. Horner. FORTUNA.—1, E. Mawson. 2, W. Hughes. TUMBLERS.—SHORT.—1, E. Mawson. 2, W. Hughes. LONG.—1, J. and S. G. Lister. DRAGONS.—1, A. Buttley. 2, J. H. Roberts. ANTWERPS.—1, 2, 3, and 4, T. Kell. *chc.* J. Pollard. E. Mawson. OWLS.—1, E. Mawson. 2, J. Pollard. TOURS.—1 and 2, T. Kell. *chc.* A. Buttley. BARNS.—1, E. Mawson. 2, W. Hughes. NUNS.—1 and *chc.* G. Lister. 2, T. Kell. SWALLOW OR MAGPIE.—1, T. Kell. 2, E. Mawson. FOREIGN OWLS.—1 and 2, G. Atkinson. ANCIENTS.—1, E. Mawson. 2, T. Grainger. ALL OTHER VARIETY.—1 and 2, Lieut.-Col. Child. 2, W. Grainger.

JUDGES.—Messrs. Hutton and Beldon.

CANARIES.

I THINK the majority mate their birds too early in the season to be successful. My way was to keep the females by themselves in a room where they had as much sun as possible, but no artificial heat. This made them close in feather and later in coming in, and were not apt to moult out of season, their health being good. I raised more birds by August than many of my friends did who began in February. I never put mine together before the last of April. Others by that time would have one or two nests of eggs at least, if not young birds. I believe in wire nests with cotton flannel lining and plenty of material for building, the best thing for that purpose that I have seen being horsehair, such as they use to mix for plastering purposes. Clean it well, and it makes a nice soft nest.

Of course you have to feed your birds extra when you put them together. I found it best to give them a small piece of hard-boiled egg mixed with coarse oatmeal. No sugar at all nor cracker. I always gave a small piece of dandelion root once or twice a week; this I found very good if the hen got egg-bound, almost always setting her right. When the young came I gave a little green feed every day, continuing the meal and eggs, and when I could get plantain and dandelion seed ripe gave it freely, also grass seed and millet, in fact any seed that the wild birds feed on, believing that the nearer nature I went the more success I had.

To know whether the young are male or female examine them about the tenth day. If they are clear-coloured birds you will find as the feather begins to come out of the quill on the head near the root of the bill, that it will be quite yellow on the male, even if he is buff. A yellow hen will be buff on that part. I never knew this to fail me. One particular thing in this as in all other breeding, was keeping them free from vermin. This I succeeded in doing by rubbing a very little white precipitate powder around the nest, and sprinkling a very little on the hen while hatching. To sum all up, health and cleanliness will give you success and profit. I breed fancies always, Belgians and Antwerps, and have raised as many on the average as if they were common, usually raising ten birds from one pair in the season. As soon as the young could feed themselves I preferred a small room with plenty of ventilation, wire in the one half of the window, plenty of clean water aside from their bathing dish, with seed of all the different weeds. By October my birds are all in good feather and quite able to stand the winter.—NIEL THOMPSON (in *American Fanciers' Journal*).

MODES OF ENLARGING HIVES.

By enlarging hives more space is given to the bees inside, which they may use either for storing honey or for breeding purposes, or for both. In spring and early summer bees are naturally bent on spreading brood widely and thus multiply population as fast as possible. At the present time hives are filled with brood from top to bottom and from side to side. Hives so filled, whether they be stock or swarm hives of the current season, will speedily ripen up to the swarming point. All bee-keepers should bear in mind that the storing of honey day by day virtually contracts the hives, for bees do not cover thickly combs filled with honey. In fine weather how fast hives are filled to crowding and reptition! Nothing but swarming or enlargement can prevent this. In ordinary seasons we encourage swarming, and take swarms till the end of June—sometimes till the 10th of July. Afterwards we prevent swarming by enlargement of hives. For many reasons we prefer the swarming system of management. Two reasons only may be mentioned here: first, it is the most natural to bees, and secondly most profitable to us. But we are rather differently placed to many bee-keepers, for we can never procure stocks or hives of bees enough to meet the orders that are sent to us for them.

All our best hives are taken away yearly by purchase. Last year we had orders for about £100 worth more than we had to sell. Every year the passion for bee-keeping increases. It is somewhat amusing to us to read what is said about the straw-hive system going out of fashion, and that it will come to an end as soon as Mr. Pettigrew is removed from "the pailde-box of the *Journal of Horticulture*." So far as we can discover straw hives are but coming into fashion and use in many parts of England. Where do the hundreds of Scotch straw hives go to which we see annually in Mr. Yates's warehouse before the swarming season? I thought he had enough this year, but all were sold before the swarming time was half over. Mr. Yates has told me that he must be prepared with a far greater supply next year. Straw hives I am certain will never go out of fashion while this country bears the name of Great Britain. If any clever man could invent a machine for making straw hives I think Mr. Yates would willingly pay him handsomely for the invention. Doubtless hives of other materials and descriptions are also in great demand.

There are various modes of enlarging hives, most of which are pretty well understood by a large section of apirians. In our practice we are guided by circumstances and resort to all known ways of enlargement excepting the collateral system. The hives we use are not adapted for collateral operations. In honey seasons we have recourse to eking, supering, and nsiding in various forms and modifications. Some eight or nine years ago we supered a great many hives, and the bees filled most of the supers; but unfortunately honeydew abounded that season, and much of it was gathered into our hives, and which polluted and spoiled the honey in all the supers—made it quite unpalatable and unfit for table use. Our fears are a little excited this season by the shining glistening leaves of the acyamore trees. When bees are gathering the nasty substance called honeydew supering should be avoided. Honeydew collected or gathered by bees is darker in colour than the coarsest molasses, and pollates and discolours all the honey it touches.

Eking is the simplest form of enlarging hives, and is perhaps the best where run honey is the object aimed at. It is the most certain mode of preventing swarming, for bees with an eke below them cannot fail to understand that they have house room and scope enough for progress. In good seasons a swarm may fill its hive and two or three ekes besides. The straw hive, the Stewarton, and some other kinds of hives admit of ekes at all stages of progress. The bar-frame hive and that of Neighbour and Sons are not made for eking; they are made and used for supering. It may be put out once or twice ago alluded publicly to the hives of Messrs. Neighbour & Sons, when I suggested the desirability of making them larger, also the holes in the crown of the hive to be larger to facilitate supering. Their hive should be about double its present size with larger crown holes. Their hive is about the size I like to use as a super—viz., to hold about 30 lbs. of honeycomb.

Nsiding consists in placing one hive below another, say an empty one below a full one. Both the Stewarton hive and bar-frame hive are suited for nsiding. The bar-frame hive has not been much used on the principle of nsiding, but I fancy it could be very advantageously used in this way. By taking the crown board of a bar-framer and placing it (the hive without the crown board) beneath a full hive, what scope and play room would be given to the bees! what full and free access between hive and hive the workers would have! One bar-frame hive with empty lives of its own kind placed above and below it without the partition crown boards would be the Woodbury hive Stewartonised, or worked with advantage on the Stewarton principle. This hint is thrown out for the benefit of the bar-frame school of apirians, at present a pretty large school. My first swarm, which filled its hive in fifteen days, was nadired on the 19th of June. I placed an 18-inch hive below it. If the fine weather continue for three or four weeks the swarm hive will be well filled with honey and the nadir with combs and brood. Nadirs do not always prevent swarming, neither do they always make good stacks for keeping. Sometimes they contain too much drone comb. Hives filled or partially filled with combs may be used as nadirs with advantage, provided the combs be young and sweet.

The Natt or collateral system of enlarging hives consists in adding a box to box on the same level or floorboard. A cottage with two rooms only and both on the same floor is termed in Scotland "a butt and a ben"; so a Natt hive has sometimes a "ben" on either side of the butt hive.

Supering is the mode of enlarging hives when pure honeycomb in a separate form is sought. We all admire supers well filled with pure honeycomb. A bit of pure white empty comb should be fixed in every super before it is placed on a hive to induce the bees to enter it at once and commence work. We use, and advise others to use, a sheet of paper between hive and super, so that the combs of the super do not get fastened to the crown of the hive. Supers thus fitted on may be gently lifted off at any time for examination. They could be weighed every night and morning, and thus be made the instruments of teaching us

whether most honey is carried up into them during the day or during the night. Bees are more apt to swarm with superns on them than with nadsirs under them.—A. PETTIGREW.

ARTIFICIAL SWARMING.

We have practised two methods of artificial swarming in our apiary. First, by removing one frame of brood with the queen to an empty hive and filling it up with empty frames; then move the hive which the queen was taken from to a new place, and set the empty hive in its place. This should be done at a time of day when the largest number of bees are away at work. As they return they will enter the empty hive, and, finding their own queen, will remain. The old stand loses its queen and all of the bees that have been flying out to work. It will have brood and eggs and will raise another queen.

I was amused last summer by hearing a novice in bee-keeping talking of a visit that he had made to a neighbouring apiary, and while there the proprietor made a swarm as described. When he was through he said, "Now you see in what a short time I made \$10." We have never practised this method excepting the first season that we kept bees, did so then by the advice and assistance of a friendly bee-keeper. We do not think highly of it, as all the old bees are in the new hive, and all the young bees are in the old one. A natural swarm has bees of all kinds, and of all ages, from the downy infant to the old veteran with ragged wings.

Second Method.—Take frames of brood and adhering bees from different hives until the requisite number is obtained to fill a hive. The bees will be so confused that they will not fight. Care should be taken that no queens are taken from the hives. All the bees that are old enough to work will return to their former hives; but as bees are all of the time gnawing out of the cells enough will remain to care for the brood. Water should be given in a sponge for a few days to the new swarms. If a queen was given to them when formed it will soon be a prosperous colony. If it was to raise its own queen it will have plenty of means of doing so, for bees will raise one if they have eggs or larvae not over three days old. It is a very good way to increase if one has worker comb to fill the vacancies in the different hives, but if these are filled with empty frames the bees invariably fill them with drone comb.—MRS. L. HARRISON, Peoria, Ill. (in *Prairie Farmer*).

ABUNDANT SWARMING.

I have an old German hive (reed and wood). It sent off a very large swarm on Thursday, May 31st, but the bees returned to the hive. Swarms issued with similar results on Saturday and Sunday, June 2nd and 3rd. A fine swarm safely hived on June 7th. June 10th, the hive threw off a good swarm at 8.15 A.M., safely hived. Just now, 11.30 A.M., a small swarm thrown off, which has joined the swarm hived yesterday. I have been a bee-keeper since June, 1839, but I never heard of so many swarms being sent off from a parent hive in so short a time. I can vouch for the above facts, as I was an eye-witness to each successive swarm leaving the parent hive.—ADAM FRENCH.

[We do not think your account of your bees at all extraordinary. After all, though the hive appears to have thrown off six swarms in ten days, for as the first three returned home, you really obtained but three swarms between the 7th and 10th June. It seems probable that the queen was lost (as actually happened to us in a like case), when the swarm issued on the 31st for the first time. The subsequent issues were probably led off by young queens in succession.—EDS.]

TO PRESERVE EGGS.

If you wish to keep eggs fresh for six months take 4 ozs. of the best glycerine and 2 ozs. of the best olive oil, shake well up together and rub on the eggs. I had some eggs for breakfast that were put down last January in a cool cellar that were treated with a coat of this egg-preserved, and packed the large ends down in fine sand or salt, and you could not tell them from freshly-laid eggs. Out of twenty-four dozen that we have used this month that were put down in that way in January and February, five only were bad, and they only had a strong musty smell.—(*American Fanciers' Journal*).

HONEY SNOW AT EDINBURGH.—The Caledonian Apisarian and Entomological Society having successfully memorialised the Highland and Agricultural Society of Scotland to teach a more humane and improved system of apiculture on a national basis, the first conjoined Show will be held at Edinburgh on the 24th, 25th, 26th, and 27th days of July; and from the ample accommodation provided by the Highland Society on the meadows for bees at work, hives, and all bee appliances, together with the great beauty of the northern capital, it is to be hoped that such attractions will cause all British bee-keepers to combine and make the exhibition a truly international one.—R. J. BENNETT, Vice-President.

OUR LETTER BOX.

STORING EGGS (*A Regular Subscriber*).—The mixture you inquire for, mentioned in Mr. Wright's book, in which to store eggs is made as follows:—To four gallons of boiling water add half a peck of new lime, stirring it some little time. When cold remove any hard lumps by a coarse sieve, add 10 lbs. of salt and 3 ozs. of cream of tartar, and mix the whole thoroughly. Let the mixture stand to temper for a fortnight before use. The eggs are to be packed as closely as possible, and to be kept closely covered up. We do not know where the bone dust for poultry food is to be had.

BEES FILLING SUPER WITH BROOD (*Benj. Cromwell*).—As you put a super on the straw hive when you hived them, and fed them at the same time, they naturally took to the super, and began operations there; of course, the combs as fast as made were occupied by the queen for brood immediately. Had we been on the spot we should have advised you to replace the super till the brood was hatched out. What you actually did with it you do not say.

SECTIONAL SUPERS (*Augustus Foster*).—If you write to Messrs. Abbott, Bros., Fairbairn, Southall, near London, and state your wishes they will doubtless supply you with the larger kind of sectional super as recommended by "B. & W."

ALANTUS SILKWORK.—We are informed it may be had from Messrs. Wallis, dealer in exotic Lepidoptera, 110, Clapham Road, London; also that Mr. H. W. Marston, of Regent Street, Gloucester, supplies foreign silk-producing Diaprytes.

METEOROLOGICAL OBSERVATIONS.

CANNON SQUARE, LONDON.
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Baromet. at sea level.	Hygrometer.	Direction of Wind.	Temp. of Sun at 10 A.M.	Shade Temperature.		Radiation Temperature.		
					Max.	Min.	In sun.	In shade.	
1877.									
June.		Dry.	Wet.						
We. 9.	Inches 30.08	deg. 59.3	E.	deg. 65.5	deg. 57.2	deg. 65.5	deg. 65.5		
Th. 10.	29.912	67.5	58.5	E.	65.5	77.9	51.2	13.81	47.5
Fr. 11.	29.83	65.7	53.2	S.	65.9	79.8	58.1	121.56	54.1
Sat. 12.	30.230	65.0	57.8	S.W.	65.9	79.8	58.1	121.56	54.1
Sun. 13.	30.123	69.0	61.2	N.W.	63.7	70.6	46.3	131.8	40.3
Mo. 14.	30.168	68.5	54.8	S.	63.7	73.7	49.0	129.4	41.7
Tu. 15.	30.108	63.1	58.6	S.	63.9	68.7	59.8	116.0	45.5
Means	30.096	63.5	66.5		64.7	72.7	62.1	120.0	47.7

REMARKS.

20th.—A very fine day, but considerably cooler than yesterday; cloudy about noon, and a few clouds in evening.

21st.—Bright in the morning, but clouded thickly over in the latter part of the afternoon; threatening rain in the evening, and slight rain from 9.50 P.M.

22nd.—Dull in the morning, with one or two heavy showers and occasional drizzles of drizzle; sunbiny; bright and fine in the afternoon; wet again in the latter part of the evening.

23rd.—Fine throughout.

24th.—Fine throughout; and very warm in the afternoon.

25th.—Fine in the morning; rather cloudy in the afternoon, but fine again in evening; very hot, and beautiful night.

26th.—Cloudy and rather dull, but with occasional glimpses of sunshine in the morning; rain for about an hour at noon; dull and cloudy in the afternoon, and fine in the evening.

Mean temperature generally about 5° in excess. The mean maximum in sun is below that of last week, as might be expected from the dullness of the early part of the week.—G. J. SYMONS.

COVENT GARDEN MARKET.—JUNE 27.

BUSINESS being somewhat quieter prices have not ruled so good during the past week, Peaches alone being in full demand. Strawberries are now in, and in the course of a day or two will be in full supply, the west of England fruit having had a very poor time of it. Outdoor vegetables are now plentiful.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	1	sieve	0 10 0	Melons.....	each	3 0	0 8 0
Apricots.....	1	dozen	0 6 0	Nectarines.....	dozen	6 0	0 20 0
Cherries.....	1	lb.	0 5 0	Oranges.....	100	10	0 16 0
Chestnuts.....	1	bushel	0 0 0	Peaches.....	dozen	2 0	0 80 0
Currants.....	1	dozen	0 0 0	Pears.....	dozen	0 0	0 0 0
Black.....	1	sieve	0 0 0	desert.....	dozen	0 0	0 0 0
Figs.....	1	dozen	6 0 18 0	Fine Apples.....	1	lb.	2 0 0 0
Filberts.....	1	dozen	0 0 0	Walnuts.....	1	sieve	0 0 0 0
Gobs.....	1	lb.	0 1 0	Paspberries.....	1	lb.	0 0 0 0
Gooseberries.....	1	bushel	3 6 4	Strawberries.....	1	lb.	0 6 0 0
Grapes (house)	1	dozen	0 0 0	Walnuts.....	1	bushel	0 0 0 0
Lemons.....	1	100	6 0 19 0	ditto.....	1	100	0 0 0 0

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	dozen	8 0	6 0	Mustard & Cress	pannet	0 2	0 4 0
Asparagus.....	1	100	8 6 0	Onions.....	1	bushel	0 0 0 0
Beans, Kidney.....	1	100	0 2 0	Pickling.....	1	quart	0 0 0 0
Beet Root.....	dozen	1 6	3 0	Parsley.....	doz.	bunches	2 0 0 0
Broccoli.....	1	bunch	0 9 1 0	Parsnips.....	dozen	0 0 0 0	
Cabbages.....	dozen	1 0	2 0	Peas.....	dozen	0 0 0 0	
Carrots.....	1	bunch	0 6 0 8	Potatoes.....	1	bu-bhel	2 6 4 0
new.....	1	bunch	1 0 2 0	Kidney.....	1	bushel	3 0 5 0
Cauliflower.....	dozen	2 0 4 0	new.....	1	lb.	0 2 0 0	
Celery.....	1	bunch	1 6 2 0	Radi-shes.....	doz.	bunches	1 0 1 6
Colerworts.....	doz.	bunches	2 0 0 0	zucchini.....	1	bunch	0 6 1 0
Cumbers.....	dozen	0 6 1 6	Peonony.....	1	bunch	1 0 0 0	
Fenives.....	dozen	1 0 2 0	Spinnack.....	1	basket	0 0 0 0	
Fennel.....	dozen	3 0 0 0	Spinach.....	1	bu-bhel	2 6 4 0	
Garlic.....	1	bunch	0 6 0 0	Turnips.....	1	bunch	0 0 0 0
Herbs.....	1	bunch	0 2 0 0	new.....	1	bunch	0 0 0 0
Lettuce.....	dozen	1 0 2 0	new.....	1	bunch	0 0 0 0	
Leeks.....	dozen	0 4 0 0	new.....	1	bunch	0 0 0 0	
Mushrooms.....	1	puttle	1 6 2 0	new.....	1	bunch	0 0 0 0



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